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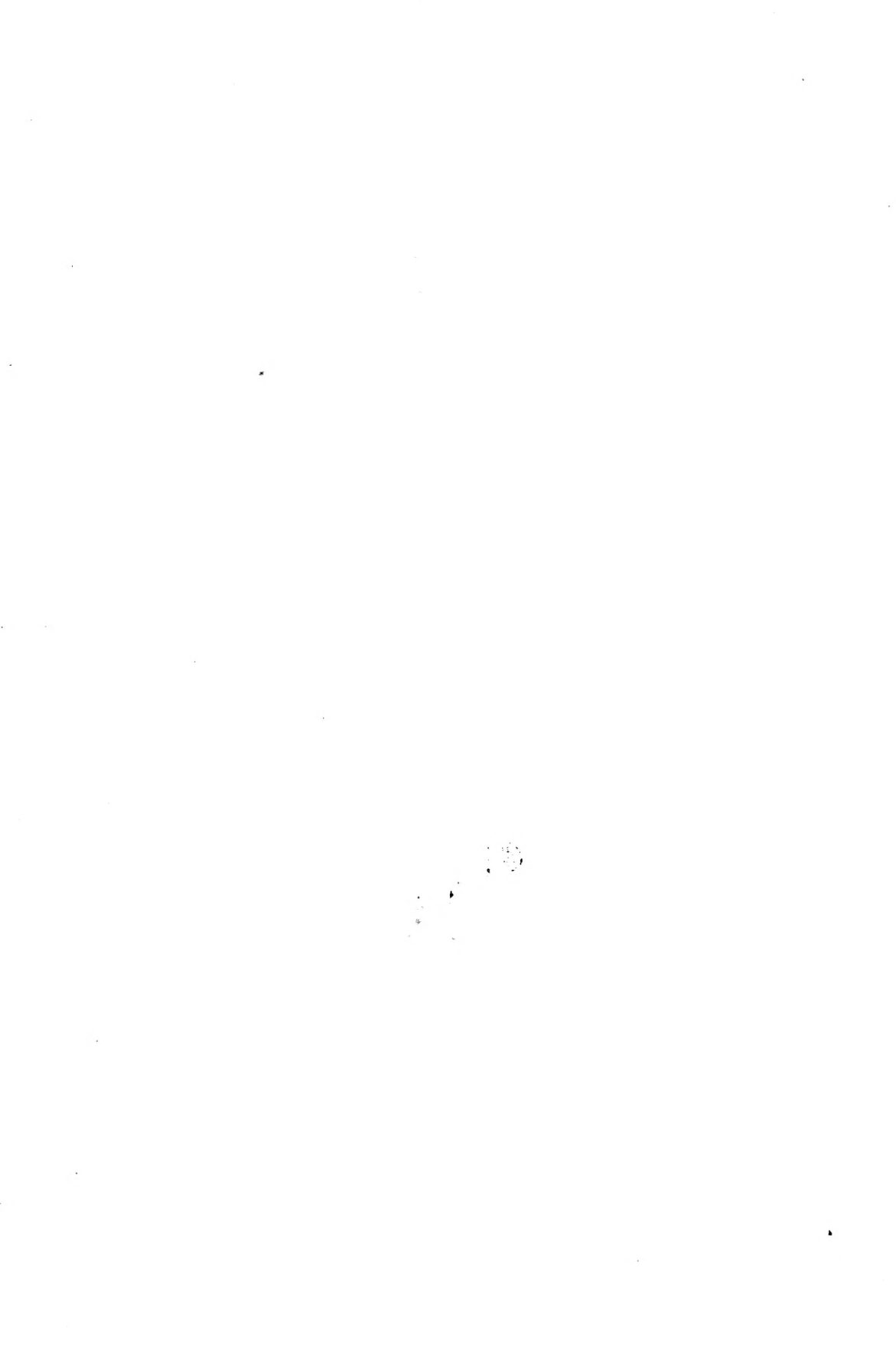
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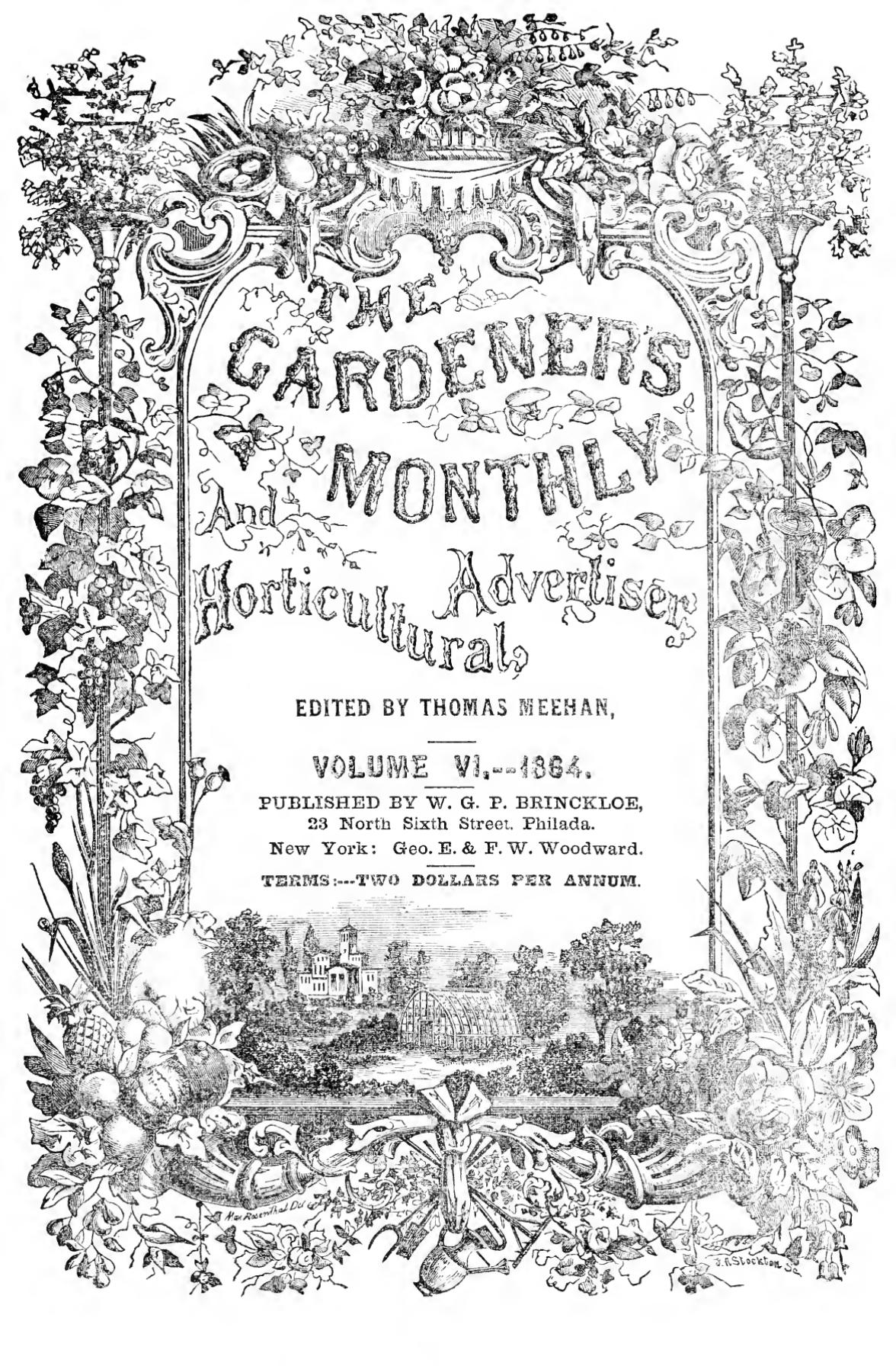
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THE GARDENER'S MONTHLY.

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THOMAS MEEHAN, EDITOR.
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Hints for January.



FLOWER-GARDEN AND PLEASURE-GROUND.

Any alterations or improvements that may be contemplated at the return of spring, should now be well weighed before the busy season commences.

The importance of having all things well studied in advance, and of getting every thing ready to hand, that no time may be lost when the time comes to act, need scarcely be urged.

Flowers for bedding should be pretty much decided on now, as to what are to be principally planted, and how arranged, as the plants can, in many cases, be propagated through the winter. It is found here that stove plants, on the average, make better bedding plants than the green-house plants usually employed in England. Some *Begonias*, *parviflora*, for instance, do well, *Browallia elata* makes a good blue; *Oxalis floribunda*, pink; *Ruellia formosa*, scarlet; *Zauchneria Californica* is hardy, but makes an admirable scarlet bedder, as also does *Delphinium formosum*, blue; *Tritoma uvaria*, *Canna Warcewiczii*, and *Phygelius capensis*, are admirable border plants, but do not commence to bloom till August. Many of the stove climbers make beautiful climbing vines in the open border. *Physianthus albens*, *Stephanotus floribundas*, *Mandevillea suaveolens*, *Manettia glabra*, and *Passiflora cœrulea*, all grow well and flower freely in the fall.

Hyacinths, or other hardy bulbous roots that may not have yet been planted, may still be put in where the ground continues open. The beds of all such bulbs should be slightly protected with manure or

litter, and be carefully watched for mice and vermin, which are likely to avail themselves of the shelter and feed on the roots.

Lawns that are impoverished by several seasons' mowings, will be improved by a good top-dressing. This may be applied any time after the leaves are gathered up, and before the snow falls. Soot, wood-ashes, guano, or any prepared manure, is best for this purpose. Barnyard manure is objectionable as generally containing many seeds of weeds.

Evergreens set out last fall in windy or exposed situations, will be benefited by a shelter of cedar branches, corn-stalks, or mats, set against them.—Whether hardy or tender, all will be benefited thereby.

FRUIT GARDEN.

At this season of the year very little will be required to be done in the fruit garden. If the weather be open and mild, pruning may be advanced if necessary. As a rule, far too much pruning is given to fruit trees. When neglected, so that the branches grow very thick together, some thinning must be done, or in the struggle to get the foliage to the light, all will spoil one another; but if very moderate attention has been given to summer pruning, in taking out strong shoots as they grow where they are not wanted, very little will be left to do now. Still summer pruning is not often done well, and most fruit trees will require some thinning.

When ground is trenched, it should be left during the winter in high ridges, so that the frost can operate on it, and in the spring it will be found very light, mellow, and well pulverized. If your ground is stiff and clayey, it can now be improved by spreading sand or coal-ashes on it, and digging it in. Manure can now also be hauled out and left in heaps, ready for spreading when spring opens. And every opportunity which open weather offers should be improved by getting ground dug.

HOT AND GREENHOUSE.

Temperature at this season about 55° or 65° for the Hothouse. It is better, however, not to keep so high a temperature than to have to give much side air to either this or the Greenhouse. What benefit is gained by such free admission of air, is more than lost by the sudden escape of so large a quantity of moist air, as that course of practice entails. Confined air in glass houses is full of moisture, and few persons have any idea how very different it is in this respect after a sudden draught of side air has been admitted through. These sudden changes from moist to dry in the condition of the atmosphere of plant houses, is one of the chief causes of mildew and many other plant diseases. Every one has noticed how well plants often seem to thrive in the green slimy pots in the houses of some slovenly or short-funded nurseryman, and go away mostly with the conviction that plants do best in dirty pots. But it is the moist atmosphere—regularly and unchangeably moist—which favors the slime, that the plants desire, and all this may be obtained without a total neglect of cleanliness. Top air may be freely given in the Hothouse with great benefit, as the plants are now beginning to grow vigorously, and flower freely.

In the greenhouse, air may be given in fine weather; but if the temperature is not allowed to go much above 45°, much will not be required. The stereotyped advice to give air freely on all occasions when not actually freezing, is about on a par with the absurd practice that lays the foundation of consumption in a child, by turning it out almost naked in frosty weather to render it hardy. Many strike their *Fuchsias* now, from which they desire to make very fine specimen plants. All kinds of plants that are required for spring or summer blooming, should be propagated whenever the time permits. All growing plants, as *Calceolarias*, *Cinerarias*, Chinese Primrose, Geraniums, and so on, should be potted as often as the pots become filled with roots. Plants which have a growing season, and one of rest, as *Rhododendrons*, *Azaleas*, *Camellias*, &c., should be potted if they require it, just before they commence to grow, which is usually about the end of this month. In potting, a well-drained pot is of great importance. The pots should be near one-fourth filled with old potsherds, broken small, and moss placed over to keep out the soil.

WINDOW GARDENING.

The dry air of sitting-rooms is the great obstacle to the perfection of window plants. The plants

should be sprinkled or syringed with water as often as practicable, and the leaves washed as often as any insects or dust appear on them. In warm rooms, they should be kept in the coolest parts, and as near the light as possible. For hanging plants there is now an increasing taste, as they afford so much scope for arranging the forms, and for beautifying the windows. *Linaria Cymbalaria* or the Kenilworth Ivy, Variegated Spider-wort (*Tradescantia variegata*), Money-wort (*Lysimachia nummularia*), the Creeping Saxifrage (*Saxifraga sarmentosa*), and Common Ivy, are among the most useful of commoner things. For those who are successful with choicer things, there is nothing prettier than the New Holland *Kennedyia Marryattæ*, red; or *K. monopylla*, blue.

VEGETABLE GARDEN.

Cabbages and lettuces in frames for protection through the winter, should have all the air possible whenever the thermometer is above the freezing point; when it is below, they need not be uncovered. They require no light when there is not heat enough to make them grow. Examine for mice occasionally. If noticed, soak peas in water till they swell, then roll in arsenic, and bury in the soil. They prefer these to lettuce when so prepared.

The preparing of manure ready for spring operations, at every favorable opportunity, should not be forgotten. Next to draining and subsoiling, nothing is of more importance than this.

Much has been said of guano, phosphates, &c.—all very well in certain cases—but nothing is so well adapted to the permanent improvement of soil as manure composed in the main of decomposing vegetable matter. It is always light and porous, thereby allowing air to circulate freely through the soil; it absorbs moisture, which in dry weather is given off to the drier soil slowly, to the advantage of the plants near by; and, what is not a small point in its favor, it aids in giving a dark black color to the soil, which renders it so much warmer in early spring; and, by so much, better adapted to the early raising of vegetables. It is also a good rule to have the manure well decomposed before using it. There are a few things which do not object to fresh manure, and a still fewer number that might, perhaps, prefer it; but the major part do best in thoroughly fermented material. Leaves, litter, and refuse vegetable matter of all kinds, should be got together at every favorable opportunity, and well mixed in with manure.

NURSERY.

Those who have commenced to heat, will be busy propagating Grapes by eyes, and Rhododendrons, Camellias and other plants, by grafting, about the end of the month. The great secret of propagating grapes from eyes successfully, is not to keep them too warm at first after being cut ready for propagating; indeed, if the eyes are cut ready, and put in a heap or in a pot afterwards, and set for a week under the damp stage of a cool greenhouse, before being put in the propagating-boxes, all the better. The harder the kind is to root from eyes, the longer it should be kept out of the soil,—say two weeks for a “hard case.” The most intractable yield under this treatment, and their eyes root readily. It is a good plan to keep all cuttings rather cool for some days after potting, increasing the heat with the length of time they may have been in. Atmospheric humidity is very important for all kinds of cuttings, provided there is heat with it. If the air is so dry that cuttings have to be repeatedly watered to keep them from wilting, they will soon rot. In the open air, where there is little snow, and the winds cold and severe, any fall-planted stock or stuff laid in, should have a litter placed over them. Where a supply of roots can be secured, apples may be root-grafted, as well as glycines, maples, roses, and many kinds of scarce plants which it is desirable to increase rapidly. In root-grafting it is best to use some composition to exclude damp, though many do not employ it. Cuttings of most kinds of ornamental shrubs may be made in the winter, and buried in the soil out of doors, ready to be set out when the spring weather arrives.

FORCING.

Peaches, Nectarines and Apricots, started in a low temperature last month, will now be swelling their buds, and should be kept well syringed, and the temperature slightly increased as the leaves unfold.

Grapes, started as directed last month, for the earliest crop, will now be starting into leaf, when the temperature may be raised to 60° or 65°. Those trained permanently to rafters will require a slightly different mode of treatment from those raised in pots. In pot-vines the object is to get all the fruit possible from the vine; on the permanent vines we have also to look to the preparing of the plant for the next year's crop. A vine that has been properly managed, should have the bearing shoots at the bottom of the cane produce nearly as fine bunches as those at the top. If the vine pushes

strongly at the top and weakly below, very little top-growth should be allowed, and as much as possible below,—the more leaves and shoots allowed at the lower parts of a cane, the stronger it will eventually become. Every care should be taken to preserve the health of the leaves,—on that much of success depends. The syringe should be often used; it discourages insects, and promotes cleanliness; and care should be had that no gas escapes from the flues. Red spider is likely to prove a formidable enemy, and should be well watched. Thrip does not often prove troublesome in early houses, but when it does, is easily destroyed by three successive light doses of tobacco-smoke. As the grapes show flower, they may be stopped two or three buds above the bunch. Those on the rafters may be thinned according to the strength of the vine. Too great a crop often injures the prospects of the next season. In pot vines every bunch may be left on that the plant is capable of bringing to perfection, as the future injury of the vine is of no great consequence. As pot vines grow, they should be treated liberally to manure-water. Well-decayed cow-dung, steeped in rain-water, makes the best liquid for the grape vine. It is not customary to let any shoots grow from pot-vines, but those bearing fruit,—the whole energy of the plant is driven into the fruit, though, as before observed, every care should be taken to preserve the *main* leaves. *The leaves from the laterals are of very little value.*

Strawberries started early, ought now to be in flower, and when they are this much forward, another set may be introduced to succeed them as they ripen. They must be kept close to the glass, and get plenty of manure-water. They are very easy to force, the attacks of the red spider being the chief obstacle. Frequent syringing with sulphur-water is the best remedy. Beans may be forced in the same house with the Strawberries, and require about the same treatment, having only the hottest part of the house to themselves.

Where Lettuce is grown with a slight heat, care must be taken to give it plenty of light, or it will “draw,” as gardeners term it, and be nearly worthless. The rule with all forced things is, that the warmer they are kept, the more light they should receive. Radishes, as well as Lettuce and Cauliflower, must not have a higher temperature than 52° at this season,—too much heat makes them run to seed in these dark days.

Cucumbers, where they are required early may be started at the end of the month;—they do best in a dung-frame. The temperature must be kept above 60° for them to do well. The best soil for

Cucumbers is a well-decayed turfy loam, mixed with about a third of decayed wood from the bottom of an old wood-pile. In a very cold climates it is very hard to maintain a proper heat with the common dung-pit without much labor, and perhaps hardly worth the trouble so early. They can be raised, though not quite so well, in the early grape or other fruit houses.

Communications.

ROOM PLANTS.

BY "ENTHUSIAST," ADRIAN, MICH.

Would you not like to see it? An inside bay window filled with pets. Every one who has tried keeping house plants knows that it sends a dozen well grown graces in the heart to grow a dozen decent looking plants. There is industry, to keep off aphids and spiders and coccus, and all their cousins. Your patience, to pick away the constantly mutilated or dried leaves, and clean up the dirt;—then, regularity and punctuality, to be sure watering is not *once* neglected. And, after all, a dusty, unhealthy troublesome lot of pets that you are half ashamed of. Stove heat is too drying,—and the dust from a broom is strangulation for all but the coarsest flowers.

Now, how are we avoid these difficulties? Build a bay window to project into your room. It will exclude dust, will furnish a moist atmosphere, keep the dirt and drainage off the carpet; save much time in moving pots; enable you to bloom even Camellias; give you handsome, fresh looking foliage; a good atmosphere for starting cuttings; preserve an even temperature, etc., etc., ad infinitum. Try it, and verify it.

Shall I describe you mine? My window faces south, and is over 7 feet high by about 3 feet wide. Fitting to the casing of this one side, but on the other reaching on a foot to the corner of the room, is my frame. It projects into the room two feet, and is five feet wide, and as high as the casing. In front is a double glass door of six panes 16 by 24.

On the side that does not fit to the wall is another sash, the same in size as each of the doors, *i. e.*, of three lights 16 by 24. This is a fixture without hinges; though it would be as well to have it serve for a door on occasion. The whole reaches down to the base of the window and the standards down to the floor. Inside, the bottom is lined with zinc turned up slightly all around, to retain any extra moisture. It also fits into the window, and turns

up slightly before sash to assist in excluding cold air. On the sides are shelves, beginning far enough up to allow well grown plants to cover the whole base without their tops touching the shelves. Some of these shelves are of corresponding heights, on opposite sides, to allow of cross shelves reaching in front of the window and resting their ends on them. Hooks are fastened above, on which I suspend hanging baskets. Each shelf has a very shallow zinc pan, in which is first spread the Sedum, or moss commonly used for edging. The bottom is also spread with moss, and that intermingled with slips of Tradescantia zebrina. The window must be tight, and the jointing of the two sash corked; and then, if you desire, a shelf fitted on to hold Verbenas, or plants that need the coolest and sunniest spots.

Now for the plants. Camellias are now coming into bloom. Plants that were fast throwing their buds stopped at once on being placed in this window. By the way, amateurs do not generally understand the necessity of giving Camellias a constant supply of water: saucers always full, especially at this time of the year,—also full *sun*. Pelargoniums in fine growth. Azaleas hurrying on to bloom. Wallflowers, Abutilons, Fuchsias, Salvias, luxuriant. Stocks superb. Heliotropes of course laugh, and smell smilingly. Pansies in fine order. Bulbs rooted in the dark, here bloom richly. Mignonette, Schizanthus, Verbenas, Petunias, etc., could hardly do better.

The arrangement also affords an easy opportunity for treating the aphids to a pipe of peace,—*pace cobiscum*,—now and then. When smoking, however, remove Heliotropes, Cinerarias and Achimenes, with some others.

The arrangement of such a window must also be attended to. For instance, set next the light on one shelf Pansies, of which two or three plants are all that can be accommodated, as they need watching and turning. On another, in nice range for the eye, Camellias and such plants as are coming into fine bloom. *Close* to the light, and in the coolest part, Verbenas and Petunias. On another Stocks and Calceolarias, etc. Farther back, in the partial shade, set Fuchsias, Salvias, and plants out of bloom. On side shelves according to taste.

Such is my Greenhouse. An Aquarium of Goldfish rejoicing in its partial shade and its cool temperature. A lamp burning in it the coldest nights sets frost at defiance.

Now would you not like to see it?

Of course you glass palace men, who cover acres with hot-houses, and raise Victoria regias are not

interested; but perhaps some one of only moderate means, who loves flowers as mementoes of God, may take a hint and receive joy.

In addition, I might describe my Wardian case, 5 feet by 3 feet 8 inches, and about seven feet high. The glass 30 inches by 32. Each end pane on hinges. This is filled with Begonias, Caladiums, Diffenbachia, Calathea, Ficus lastica, Maranta, Coleus Verschaffeltii, Mimulus, baskets of Lycopodiums, Tradescantia and Achemines; Ivy and Cissus running luxuriantly up the angles; Poinsettia, Passion-flowers, &c.

The cost of the window about \$15; of the Wardian \$40.

THE PREMIUM DELAWARE VINE.

BY J. S. L., HADDONFIELD, N. J.

The superior Delaware grapes, shown at the late exhibition of the Pennsylvania Horticultural Society's display, in September last, elicited many enquiries respecting the vines which produced them.

I have seen no notice of them, nor of the vine, and the following is at your service, and may gratify some interested.

The vine is now four years old, and stands in the garden of J. L. Rowand, Haddonfield, N. J. At the surface of the soil it measures six inches in circumference, but contracts to three and a half inches a little higher. It has two arms of six feet in length, each of which gives rise to three vertical branches, which made during the past season, a growth of 18 to 20 feet of wood, some of it more than half an inch in diameter. It thus covers a trellis twelve feet long by sixteen feet high, overtopping it by many feet of depending shoots. Numerous oblique shoots from the main stem have made the same surpassing growth, and altogether it has produced the past season upwards of 200 feet of new wood. The vine one year old was planted in 1860,—grew that year but six inches and was killed to the ground. The next year it grew sixteen feet. Last year it produced a few bunches, and during the past season fifty to sixty bunches, which were not thinned out.

The soil of the garden is however a strong loam. No extra care has been taken with this vine. Its exposure is toward the North-east, upon a barn; and probably its proximity to such a structure will explain the fact that it made a growth so excellent, and that its fruit was of a quality so superior. The Delaware must receive high manuring. Many of the bunches from this vine were from 5 to 6 inches in length, honest measurement, and one at least weighed about seven ounces.

A very experienced vine-grower pronounced the vine unsurpassed; and the award made for the fruit attest the high opinion of the Fruit Committee of the Pennsylvania Horticultural Society.

The success attending the growth of the above vine should encourage those who find the Delaware of slow growth in its infancy, and remind them that patience and due attention to its wants will not be unrewarded.

COLD GRAPERIES.

BY B. G. DAVID, SAEGERSTOWN, CRAWFORD CO., PENNSYLVANIA.

In the October number of your journal I notice an inquiry from one of your correspondents relative to the culture of foreign grapes in cold houses. As I feel deeply interested in this subject, I feel impelled to write you some of my experience, which, if you think it will be of any benefit to your readers, is at your service.

For several years, prior to the year 1858, I had been trying to raise grapes in a small way, in the open air. I had the Catawba, Isabella, Clinton, and a few others, which I took care of as well as I knew how. These vines grew finely, blossomed freely; but untimely frosts, cold rains and chilling winds, always destroyed the fruit. I met only with disappointment, and never grew a bunch of grapes that were fit to eat. I had about come to the conclusion that grapes could not be grown in this country, when, by chance, I came in possession of a short treatise on grape culture, with a drawing of a cheap cold grapery. Previous to this time, I had read no work on horticulture,—did not know that there was a work extant which treated of grape culture,—never saw a grape-house, and did not know there was one in existence. This little treatise was, therefore, a new revelation to me, and I at once set about building a grapery.

I purchased some old sash, belonging to a neighbor, which had once been used to cover a small greenhouse. These I repaired,—got other sash made, and built me a lean-to house 40 feet in length and about 12 feet in width. It is 9 feet high in the back, and 2½ in the front. The sills are laid upon stones placed from 6 to 8 feet apart. The frame work is of the cheapest description. The back is boarded up with rough boards, placed upright, and the joints battened. The rafters are 2 feet 6 inches apart,—the sash are in two pieces, the upper ones lapping over the lower ones, and so constructed that they can be slid down for ventilation.

The whole structure, exclusive of my own labor, did not cost over \$50. Of course it is rough; but

it is pretty substantial, and a coat of white-wash makes it look quite respectable. (It will cost a good deal more to build such a house now, as materials are dearer.

The soil on which my house is built is a rich gravelly loam, with a gravel subsoil. My border was trenched to the depth of about 2 feet, and enriched with some bones, lime, rubbish and stable manure. I planted 24 vines: 12 on the front and 12 on the back. Of varieties, I planted 8 Black Hamburg, 3 Wilmot's Black Hamburg, 2 White Frontignan, 2 Golden Chasselas, 1 Royal Muscadine, 1 Grizzly Frontignan, 2 White Cluster, 1 Zinfandel, 2 White Sweetwater, 1 White Nice, and 1 Muscat of Alexandria. Some of the vines I obtained of O. T. Hobbs, of Randolph Nurseries, in this county, and some of Ellwanger & Barry of Rochester, N. Y. Some of them were yearlings grown from single eyes, and some were older, and grown from cuttings, I planted them in April and May, 1858. They all grew finely, and I could discover little difference in the growth of those that were the oldest from the yearlings. Some of them reached the top of the house the first season. In the meantime, I purchased Allen's work on the Grape, and followed his directions. In November I cut my vines back two or three buds, and covered them with straw. The next season they all grew amazingly, and some of them bore small clusters of grapes, which ripened well. I then had my first taste of a foreign grape. I was delighted,—I had never tasted any thing so good before.

I cut my vines back again, according to directions, washed them with soap and sulphur, and again covered them up for winter. The third year (1860), I was rewarded with a fine crop of grapes. Nine varieties ripened their fruit,—and such beautiful clusters. Some clusters of the Hamburgs weighed two pounds; and, at last, I had plenty of grapes that were fit to eat, that were not hard to take.

I must mention that a hail storm in August broke many lights of glass, which cost some \$10 for repairs, but did not injure my vines.

In 1861 my vines did not bear well. I think I permitted too much fruit to ripen the first year of bearing. But last year, (1862), I had a splendid crop, exceeding all my expectations. I had over 200 pounds of well ripened luscious grapes. I had clusters of Wilmot's Hamburg which weighed 2½ pounds. This year my vines are healthy and vigorous, but did not fruit as heavy as last year,—about half as many as last year. But they are good and well ripened, and I am satisfied. Since my

vines commenced bearing I have sold enough grapes to pay for my grapery, besides many given away, and using all we wanted in my family, and they have not received more care or attention than is usually bestowed upon a coop of chickens.

Perhaps it is unnecessary for me to say any thing as to varieties. I will say, however, that I find the Hamburgs by far the most productive, and they are sweet and wholesome; and if I were planting for profit alone, I think I would plant no others. There are other varieties which are more delicious, and amongst these I like the White Frontignan the best.

And now permit me to say, that if every person liked good grapes as well as I do, (and I find few persons who make sour faces when they taste mine), and knew how easily and cheaply they can be raised, that in a short time there would be one-thousand grape-houses in the country for every one there is now.

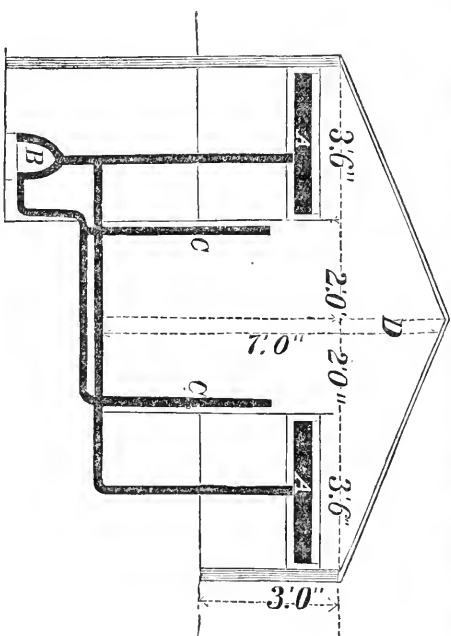
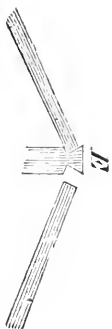
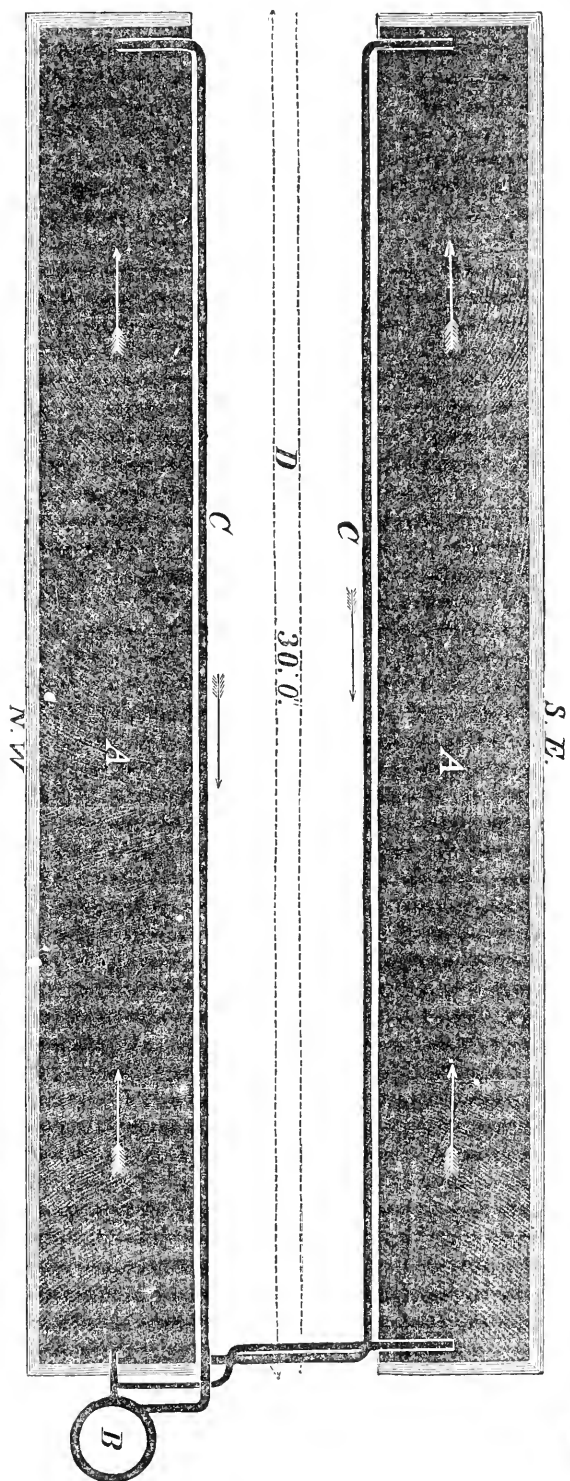
CONSTRUCTION OF A PROPAGATING HOUSE.

BY PETER HENDERSON, JERSEY CITY, N. J.

There is scarcely a week passes but I am written to by some of my distant customers, making enquiries about the construction of Propagating Pits, or Greenhouses. I have thus far endeavored to reply to such individually, but find I rarely have time to do so in a proper manner; but as every body reads the *Monthly*, with your consent, I will avail myself of its pages to give a general reply to all.

Requiring to remove my Greenhouses from their present location, I have been experimenting for the past two years so as to get at the best system for permanent construction of a Propagating House, and for Plant Houses for commercial purposes; and the result of our experiments lead us thus far to believe the best style of a Propagating house to be what is endeavored to be represented in the accompanying sketch:

It will be understood from plan, that the tanks *A A* are each an undivided "flow," the 4-inch pipes, *C C* being the "return," pipes for both. The dotted lines *D* being a light board partition, dividing the house. The advantages of a house so constructed are, that during the *early* fall or *late* spring months, the North-west side is best fitted for Propagating, while in the dark winter months the South-east side may be used to advantage. Later in Spring, while no longer in use as a cutting bench, this side, with its "bottom heat," will be of great use for forwarding newly potted off cuttings,



- A A* Tanks.
- B* Boiler.
- C C* Return Pipes.
- D* Board partition,—dividing house.
- E* Section of connection of sash with ridgepole.

preparatory to being removed to other houses or frames. All that is necessary when the heat is required to be shut off from other divisions of the house, is merely to insert a plug in the pipe connecting with the tank in the division not wanted.

The use of the return pipe is necessary to keep down steam in the house, which otherwise would be troublesome for some sorts of cuttings, otherwise tanks might be used solely without pipes.

The walls of the house may be formed of stone, brick or wood, as convenient, of about 3 feet in height, as shown in end section.

The tanks we use are formed of tongued and grooved pine boards, well fitted in white lead, and thoroughly painted, so as to cover up all chance of leakage,—they are 3 inches deep, the top covered with rough boards, (though slate or light flagging would be better), on which is laid two or three inches of sand, to receive cuttings.

The end section shows the angle used, formed by 6 feet sashes. No cap is used over the ridge, the sashes rest on a strip nailed to the ridge piece, which, well fitted, keep out cold and wet sufficiently, doing away with the necessity of the cap.

This, with us, is a new feature, and of great importance, as it enables us to give air by simply raising the sash at the top, which is done by a small iron bar, of from 8 to 10 inches long, with a few holes in it, so as to gradate the admission of air.

The cost of fully completing such a house, boiler, tanks, &c., included, is in this district, about \$5 per running foot, when the length is about 100 feet; in shorter houses the cost would be a little more.

In my next I will describe our manner of constructing Plant Houses.

DIVESTING FRUIT OF THEIR PULP.

BY SWIFT, BRANDYWINE.

In the third volume of the *Monthly* there is an article on "Skeletonizing" the leaves of plants, etc., which does not give the process for divesting fruit of their pulp. The following, copied from *Cassell's Popular Educator*, for 1852, may be of interest to your readers:

"Take, for example, a fine large pear, which is not tough, but soft; let it be neatly pared, without squeezing it, and without injuring either the crown or the stalk; put it in a pot of rain water, cover it, set over the fire, and boil it gently till it is perfectly soft. Then take it out, lay it on a dish filled with cold water, and holding it with one hand by the stalk, rub off as much pulp as you can with the finger and thumb, beginning at the stalk, and rub-

bing regularly towards the crown. The fibres are most tender towards the extremities, and therefore require greater care. Any pulp now sticking to the core may be removed with the point of the penknife. In order to see how the operation advances, the water should frequently be thrown away, that clear water may be substituted. When the pulp is removed, the remainder should be placed in spirits of wine. The fibres that will thus be presented to the eye exhibit a very remarkable and beautiful structure. The same process may be pursued with the bark of trees, with a similarly interesting result."

COMPARATIVE MERITS OF NEW GRAPES.

BY A SUBSCRIBER, LYNN.

We have been considerably interested in the discussions on new hardy grapes in your valuable journal, and having derived much information from its perusal, thought a few facts and our own experience in this matter might be of some interest to those about commencing to plant, but not knowing exactly what varieties to select among the numerous kinds recommended.

Endeavoring to have all the best kinds for open air culture, of value, we concluded that the only way to get the information wanted, and to find out the comparative value of new kinds, was to examine them growing together in same gardens, under equal advantages of soil, culture and position, and not choose our sorts by specimens exhibited at Horticultural Societies, where varieties in competition are grown under widely different circumstances, so that their relative merits cannot be judged correctly; for instance, there were kinds exhibited at the Massachusetts's Horticultural exhibition the past fall, that the common observer, not knowing where they were raised, would suppose to be earlier and better than other sorts on exhibition, which were greatly their superiors every way when grown side by side in the same garden.

Taking all this into consideration, and wanting to get at the truth in the matter, we concluded to examine for ourselves in two or three of the gardens about Salem, which were noted for growing many varieties of out-door grapes. The first one we visited was that of Mr. Wm. H. Harrington, an amateur whose experience and sound judgment in these matters was second to no one in this vicinity; here we found the owner at home, who seemed pleased to show us everything that he thought would help us in our examination: he first pointed out to us a fine vine of the Hartford, loaded with beautiful

clusters of fruit, and at that time about ripe; this he considered of some value for its earliness, but not so good a quality as some others which he was soon to show us, and it had the fault of dropping its fruit after being picked and moved about, but, in his opinion, would be more valuable for market than the Concord, to which he now directed our attention; this was just beginning to turn, and not so far advanced by two or three weeks, and two-thirds of them were affected by rot. Directly back of this was a vine which the Concord shaded somewhat, bearing an enormous crop of fruit, nearly twice the size of Concord, both in bunch and berry, and already far advanced in ripeness, and in fact more eatable than Hartford, at this time such a sight for an out-door grape, I had never before seen, as it had two and three clusters to each shoot, many of them weighing a pound, and some $1\frac{1}{2}$ pounds each; the vine appeared very vigorous, making monstrous shoots, and fully equalling both in size of wood and fruit the best hot-house productions. We were surprised, and inquired the name of this variety, and were told that it was the Rogers' Hybrid No. 15. The engraving in your last did not do it justice, and, we were informed, was taken from a specimen grown on a vine the first year of bearing, we certainly saw one hundred bunches on this vine larger, and some, which you would find it difficult to get on a page of your journal. Mr. Harrington told us that he considered this by far the best out-door grape in his collection, and he had tried everything that came out. This vine was planted out when a few inches high, four years ago last spring, and now covers a space 75 x 10 feet, and had borne this season between eight and nine hundred bunches, that have fully ripened long before frost. Mr. Harrington remarked: "he would rather have this grape for his own use than the best Hamburg; and intelligent gardeners who have had the care of vineries, both in this country and Europe, have said the same," and I must confess that I was very much of their opinion, although it was a good deal to acknowledge. The next grape we came to on the same trellis was the Creveling, which has since been taken up to make room for the No. 15. Creveling, here in equally favorable place was not quite so far advanced as the No. 15, and the foliage was much injured by mildew, while the 15 just passed was perfectly fresh and bright; the fruit of Creveling which we tried sometime afterward, was found to be sweet and tender, but lacking in flavor, and in no way comparable to 15, and many other Nos. of the Rogers' grapes, although an acquisition in earliness, over Concord

and Isabella, for our climate, and a good sweet, tender, grape for a sheltered garden.

The next in order was No. 3. This was about the earliest of any grape here, ripening quite as soon as Hartford, and a much better fruit, and the berries not dropping when ripe, and very tender, juicy and high flavored. Then comes No. 4, a noble looking fruit, fully equal in size and appearance to the best Hamburgs under glass, this is destined to be one of the best market grapes in the country, being as early, and turning here a little before Creveling, and a week or two sooner than Concord, and very productive. Then comes No. 1, a little later but a splendid looking, light colored, large oval grape, very tender, thin skinned, with a peculiar, pleasant flavor; this has been pronounced in Pennsylvania one of the best hardy grapes there, although not quite so early here as 15 and others, yet it is earlier than Isabella.

There are numerous other Nos. which we saw growing here, equal to most of these, but which it would take too much of your space to now describe, and will only mention a few more kinds and their comparative merits, which we saw growing in the garden of Mr. Rogers, on whom we called a short time after. Here we found a place not so well adapted for growing grapes, in consequence of its being an old garden, and crowded with trees; but still we could get at the object of our visit, which was to compare the kinds under same circumstances and advantages; again we found that those kinds which were best at Mr. Harrington's were the same here. No. 3 was the earliest grape; No. 39, a black grape, next, then 15, 19, 4, 33, 43, and Delaware; after these came Creveling, which here was not so good, and had the same fault of losing its foliage by mildew, and the same want of flavor, and sprightliness in fruit, although Mr. Rogers told us that a friend of his, in the southern part of Salem, who had this grape of him, in a more favorable place, had ripened it two or three weeks in advance of Mr. H.'s and his own, which were put on exhibition at Boston, and there reported on as being very early. Here, in two gardens, grown side by side, it is not so early as some of Rogers' grapes, and much inferior in flavor; the same is the case with Allen's, which was later than Creveling, as raised here, although it was growing on a grape border in the most favorable place in this garden, but the fruit was flavorless, like Chasselas grown in the open air, and later than 3, 4, 15, Creveling, Delaware and many others growing near, although it might be grown in some favorable place in the open air, where Chasselas would mature, to

be as good as we have sometimes tasted it grown under glass; this sort was also reported on as being very early at Boston.

The result of our visit, and the examination of varieties growing under equal advantages, we should not hesitate from what we saw to choose for own use and cultivation here: first, far above all others, Rogers No. 15, then 3, 4, 19, and for curiosity and a nice little early grape, the Delaware, although this too is tender in foliage, and we think it would be ten years at least in producing the weight of fruit we saw on No. 15 at Salem; then Hartford, as a very early sort, and for market the Creveling, and for variety, if we had a warm nook or corner where we thought Sweetwater would ripen,—Allen's White.

THE CALABRIAN RAISIN GRAPE.

BY "FOX MEADOW."

The Frontispiece in the December number of the *Monthly* proves for a certainty what a good artist can do, for any person who has ever seen the natural fruit will recognize it in a moment.

We recognize it as the old FLAME-COLORED TOKAY, almost as different from the "Calabrian Raisin," as a Hamburg is from a Muscat. If Dr. G. P. Norris bought the variety for CALABRIAN RAISIN, it is a mistake, and you have been to the great expense of beautifully lithographing the old *Reine de Nice*,—*Queen of Nice*,—*Flame-colored Tokay*,—*Lombardy* of some parts of ENGLAND, and the "Wantage," so called, in Berkshire, where it is grown extensively.

I think that if we were to hunt the world over for varieties of grapes, we could not find one that could possibly be confounded with or mistaken for this "Flame-colored Tokay," for there is no other grape, that I am aware of, whose outline of berry is any thing like it. The berries of the CALABRIAN RAISIN are round, pure white and transparent, so much so, that the seeds can be counted in the fruit. The flesh is sweet, firm and agreeable. The leaves slightly lobed, smooth on both sides, and the ribs shine. This *Reine de Nice*, or which of the above names we may think proper to call it, is a stronger grower than the "Calabrian Raisin," and will produce fruit three times its weight, but inferior in quality to the grape you intended to illustrate.

Some of these late grapes improve in flavor by hanging long (months) on the vine. The *Barbarossa* may be taken as an illustration, for it loses its (to me) peculiar sickly flavor, and, with time, becomes nearly as good as a good *Hamburg*. With

this "Flame-colored Tokay," I fancy the flesh of the fruit gets tougher, and nothing added to its third quality flavor. The "Calabrian Raisin" we may put down as second quality, beautiful to look at, and loses nothing of what excellence it may be considered to possess, by hanging on the vine.

We are sorry to have to call your attention to this mistake, but we know full well that you are just as anxious that fruit should receive its proper nomenclature, as we are. To Dr. Norris we would say, "cheer up," and graft the "true one" on its audacious representative.

[We are very much obliged to "F. M." for his objection, which we are inclined to think well founded. We have not had the opportunity of seeing "Flame-colored Tokay" for many years, but our recollection is that the berries are barely oval, and entirely without that peculiar contraction towards the apex, so well marked by our artist.

Still, by reference to an English description, it is evident "F. M.'s" description of Calabrian Raisin is correct. Our recollection of Flame-colored Tokay is that it has very deeply lobed leaves, and is readily distinguished by that character.—ED.]

PENNSYLVANIA HORTICULTURAL SOCIETY.

DISCUSSIONAL MEETING, NOVEMBER 3, 1863.

The President in the chair.

Mr. Thomas Meehan presented the following Essay on

ORNAMENTAL PLANTING OF TREES AND SHRUBS.

This is a subject on which an extensive treatise might be written without exhausting it; and it is one also on which a considerable difference of opinion will exist, as what is called taste has so much to do with the question, and we all know how variable tastes are. It must not, however, be supposed that taste is altogether a creature of education. Correct taste is founded on principle. Without a reason can be given for what we do, it is merely caprice. Some persons, it is true, seem to possess good taste as if by instinct. But this is rather from education; or habit, which is but the sum total of education. Though the beautiful handiwork of such persons seems to spring from mere whims for which they can give no reason; yet one accustomed to analyse works of art, in order to discover their scientific principles, will trace it all to true natural laws of beauty, which can be made evident to all.

I take for my leading principle in ornamental planting, that Utility should be at the bottom of it

all. Ornament should invariably be an adjunct to something useful. Our clothing is something necessary to keep us warm. That want supplied, we study to make it as ornamental as possible. A bunch of flowers carried on a ladies head because flowers are pretty, would be ridiculous; but as an ornament to a bonnet, which is supposed at least to be something useful, they are in proper place, and always please. Even a nose-gay, which seems to have no useful purpose connected with it when simply carried in the hand, had its first origin in the desire to have something sweet to smell at—and though flowers are often bunched together that have no fragrance whatever, that is rather a perversion of their real object; for who would carry around artificial flowers in their hand, no matter if they were so perfect in imitation as to deceive every one who gazed on them, merely because they were pretty, but without any ostensible use that could be made of them in that way? I am particular to dwell on this point, because it seems to be very frequently lost sight of by persons of reputed taste. Even Downing, our great master of the art of Landscape Gardening, does not seem aware of this principle of utility underlaying all, nor indeed do we now remember any author who does more than refer to it in an incidental way. Downing indeed seems to regard true taste in planting, as merely a "copying of nature;" and the best advice he can give to a learner, who has had no experience in ornamental planting, is to throw a lot of stones around the spot proposed to be planted—a handful altogether—scattering them everywhere around—and where each stone falls, there stick in the tree. This may be nature's way of doing things; but it is barbarous uncivilized nature. When the acorn falls as it may, or the seed is scattered by the wind, nature is so bent on the preservation of the species, that she loses all thought of beauty. She is then in her most wayward mood, and in the worst possible state to make a model for us to copy after.

I would rather tell the beginner to ask himself why he plants? what object he has? what he designs to accomplish on the place he proposes to plant? It may be a very hot place in summer—either about the house, or along the walks or drives leading to or around it. For the purpose of shade, quick growing trees, and trees with spreading heads must be selected. Then we proceed to make this useful idea bring forth as much beauty as possible; and, still keeping in view spreading and rapid growing trees, select them of beautiful forms, handsome flowers, striking foliage; or perhaps some point is particularly cold in winter—here we

will want to thickly belt with evergreens, and, enough of the useful being conceded, proceed to carry it out with as much beauty and grace as possible.

But besides shade and shelter, there is another want of the mind, which planting can well minister unto. A man's desire to own land, is usually limited only by his means of acquiring it, or of keeping in good order what he can possess. Consequently all wish their places to look larger than what they really are. Judicious planting will produce astonishing results in this line. The boundaries are first planted as thickly as possible—fast growing deciduous trees behind; a belting of Evergreens in front, and again before all, masses of dense shrubs or thick set low growing trees. As there can then be no line fence seen, the planting may be the boundary of a wood of boundless extent belonging to the proprietor for all the spectator can know. The idea can be made still more effective by varying the outline somewhat—bringing it forward in some places and allowing it to recede in others; always bearing in mind that while an object in the advance does not appear any nearer to us than it really is, one receding especially when on a slight descent—seems farther off than it is in fact. Another way to heighten apparent size of ground, is to plant masses in front, but disconnected from, the trees composing the boundary lines. The lines of green lawn wind around the masses of foliage, and ultimately lose themselves within it; no one guessing, in a well planted place—where. If there be room enough to have several lines of masses of foliage in advance of each other, the effect in giving an appearance of immense extent to a place can be made complete, a place of say five acres, in the hands of one who understands the business may be made to appear of ten, or even twenty acres at will.

Then comes in ornament and beauty. Having arranged in your mind, where your groups of trees are to be, and why they are to be, select such trees as will not only enable you to accomplish the object, but will also produce the most lovely and charming effects in the accomplishment. A knowledge of the peculiar character of trees individually is essential to the best results. If, for instance, we put a single tree that keeps its leaves green on late, in a group with many other trees that fade away in the fall, early and of brilliant color; the idea suggested is not a pleasing one. It seems as if it had been forgotten. Something seems the matter, and the circumstance seems rather an odd than an interesting one.

Real evergreens do not strike us so disagreeably—we know they are evergreens, and they seem to add a warm and strong expression to the scenery that always pleases us.

When studying the purely ornamental points of trees, there are many subjects for consideration. Some come out early into leaf, or retain their leaves late in fall. Others have beautiful colored young growths when first pushing—others have their most brilliant hues when fading away in the fall. Again as to form, some have slender, graceful twiggy growths, like the Larch or the Beech, others are vigorous and stout like many Oaks and Ashes. Then there are round-headed trees, spreading and diffuse trees, weeping trees, erect trees, and trees with different colored wood. Indeed there is no end of material for skillful combinations; for if 24 letters in our alphabet can give thirty-thousand words; what a capacious language does not nature afford us in the hundreds of different trees and shrubs, that form the alphabet of natural arborescent beauty!

Very little has been written in respect to the practical combination of trees and shrubs, so as to get from certain groups high artistic effects; and I should be pleased to hear from any of my fellow members present accounts of groups that may have struck them as particularly beautiful. In the early spring for instance, I have noticed the Red bud, or Judas tree; the Halesia, or Silver bell; and groups of Forsythia around the two; be a very pretty combination. Again the *Pyrus japonica*, Forsythia, or *Spiræa prunifolia*, planted in circles around a dwarf growing evergreen—a Holly for instance, is one of the most lovely things imaginable. The *Spiræa* is first planted around the Holly, around that the Forsythia, and finishing off the whole, a circle of the Scarlet *Pyrus japonica*. I have noticed an edging or border of *Deutzia gracilis* along a clump of Mahonia, to add exceedingly to the already great beauty of this plant when in blossom—but I have already occupied too much of your time, and can do no more than suggest the subject for your discussion.

Before, however, I conclude, I would refer to the ornamental planting of small places. The same laws of utility or necessity exist here as in large places, to shade, to screen—to add to apparent extent—many of them indeed to a greater extent than in larger places; and yet it is a very common thing to hear people say it is a ridiculous to apply the same rules to the planting of a small place, that you would in the arrangement of a larger one. I would grant that it is more difficult to apply these

rules. The many failures we see, arise from the difficulty. Yet the difficulty seems greater than it is. It is not that rules should be different, but that we should apply different materials with the varying circumstances. On a large place we use large trees,—the Tulip-tree, Beech or Chestnut. On a small place Magnolias, Hornbeams and Chinquapins have to be employed to get the same results in a small place. Yet it is an almost universal thing to find Tulip-trees, Maples, Lindens and others occupying, when but 10 or 15 years old, scores of feet of space, planted thickly on a hundred feet lot. I have two places now before my mind's eye—each one planted about 10 years ago—one was set out with beautiful trees—the other had clumps, masses and borders of shrubs planted with the trees. In the latter case the trees were gradually thinned as the shrubbery grew larger, till now the place seems double the size it really is, and is the admiration of all who behold it. The other, looked very pretty when it was planted; the trees were straight as could be selected; the heads were as full as could be desired, and the arrangement all that could be done with them; now they have large thick trunks; the stout heads have smothered out the lower branches, and nothing but the bare trunks are visible. Neither Shrubby nor grass will grow under them—and the only objects of beauty to be seen on the place, under these scaffold looking objects, are a rather pretty house, and the pretty female members of the family, who can be seen anywhere about the place, at any time, by any rude gazer who may chance to be passing by.

There is nothing like small trees and small shrubs for ornamenting small places, unless it be ornamental hedges, and it is surprising how little this idea is employed to make small places seem larger. By using them to divide lots, gardening of very distinct characters can be carried out on several parts of the ground, and by thus having much contrast of character on one place, and so much more than is usual, the idea of immense extent is readily obtained.

To sum up my views of Ornamental Planting, they are briefly these:

Utility is the foundation of beauty; and no attempts at ornamental planting will be successful, that do not have useful ideas for their starting point.

The useful idea being fully conceded, planting to be the most highly ornamental, will depend in general on its harmony with that idea, and on a skillful combination of the various elements of beauty in trees, with one another.

As the same laws of necessity must exist in small places as in large ones, the same rules of landscape gardening will apply, the only difference being to adapt smaller materials to the lessened size of the grounds.

Mr. Walter Elder also presented an essay on the same subject.

Mr. Meehan, in reply to a question, stated that he had never seen a place planted exclusively with one kind of tree. There would be too much sameness. Would prefer a variety.

Mr. Satterthwait—Opinions differ as to planting different kinds together. Many mix the various evergreens, as border to a carriage drive.

Mr. Meehan—Much depends on the style of drives. We should seek variety without strong contrast. For instance, the Austrian Pine does not match well with many other evergreens. The Norway is one of these. The White and Austrian Pines harmonize well in shape, and afford a pleasing contrast in color.

The President—It was the old fashioned practice about Philadelphia to plant country places with one kind of trees, as the White Pine for instance. Deciduous trees look well along an avenue, but it is difficult to obtain a uniform growth.

Mr. Satterthwait—Sees no objection to alternating Norway Firs and Austrian Pines along a winding roadway. Would mingle the Austrian, Scotch and White Pines, and the Firs generally.

Mr. Meehan—As a rule there must be a certain degree of harmony, even in contrasts; they should not be too violent. The Austrian and Norway are entirely different: one round-headed, the other conical; one has small leaves the other large; one with stiff branches, the other of a graceful, sweeping habit.

Mr. Harrison—Trees should never be planted so near a house as to allow the drip of its branches to fall upon it, or even to shade it much. Shade should be obtained by means of porches and verandahs. Close proximity of trees insures a damp unhealthy atmosphere. The grove or thicket should be at a little distance from the dwelling, to be resorted to in pleasant weather, for its cooling shade.

Mr. Satterthwait—The sunny side of the house should always have some shade from trees,—not too many, as in a wood, for it breeds mosquitoes. Large trees serve an excellent purpose as lightning conductors, at 50 feet or so from the house.

Mr. Hayes—Would Mr. Meehan prepare the ground for planting ornamental trees as thoroughly as for fruit trees?

Mr. Meehan—Yes; more so in some cases. We want to secure rapid growth.

The President (who has an Austrian Pine of singular beauty on his lawn) planted in an old vegetable garden, and every tree and shrub makes excellent growth.

Mr. Meehan—Many of the conifers, if grown too fast, get thin and unsightly. On the other hand, if the soil is poor, enrich it; dig deep around the trees at the ends of the roots, or top-dress.

Mr. Satterthwait—The White Pine will grow in soils where there is apparently no vegetable matter present. It is the only tree I know of that will.

The President—A pretty effect can be produced by massing some of the new and rare varieties of evergreens in pots. Being of late introduction and comparatively small size, they are readily grouped on the lawn in the pots, and covered with sod, presenting the appearance of growing where they stand. In the fall the sod is removed and the plants are taken into winter quarters.

Mr. Meehan—The overgrowth of evergreens, in too rich a soil, may be checked by pinching in the young shoots before they have made more than one quarter their full growth. They send out new buds at once, and grow thick and bushy. The White Pine, thus treated, forms new buds along the whole length of each branch.

Mr. Harrison—There is danger of over-pinching. Unless done with skill and discretion, the trees are prone to grow too much to top, which then overhangs the base, and the conical character is lost. Bushiness to is attained, in the Norway for example, at the expense of the natural pendulous graceful sweep of the branches. Trees often root-pruned and removed with a ball of earth, often take this character, looking like well shorn box.

Mr. Satterthwait—There is no difficulty in pruning evergreens. Has cut off the tops of Balm of Gilead 20 feet high; the lower branches thicken up and the trees promise well. Still there is that trouble of the overhanging top growth. The Balm has been much deciered of late. When well treated it is a beautiful and valuable variety. They are generally poor, because taken out of the woods and unskillfully treated in the nursery.

Mr. Meehan—In deep alluvial soils and well sheltered, the Balm of Gilead will do as well and last as long as the Norway Fir. It is always green and does not change its color like many others.

The President—The Silver Fir, is preferable to the Balm, handsome and a better grower.

Mr. Satterthwait—If evergreens are so treated as to thicken well at the base when quite young,

they will do well afterwards. They are much injured by the North-west winds, except the Austrian and Scotch Pines, which do not suffer from them.

The President—How can a clump, which has grown up thick and bushy, be made available.

Mr. Meehan—No use can be made of it except for its outline, or to form a secluded seat or arbor. The best new hardy arborvitæ is the *Thujiopsis borealis*.

The Lombardy Poplar was spoken of disparagingly, by some members on account of its bare ragged appearance when old; and approvingly by others, as contrasting well with round-headed trees and clumps, and as being in good keeping with flat-roofed houses, like the Italian villas.

The President—The area of a small country place may be apparently enlarged by judicious planting, concealing the boundaries, winding walks, clumps, and the like.

Mr. Harrison—Planting large trees for immediate effect generally results unsatisfactorily. Some ambitious attempts of this kind in the New York Central Park have proved entire failures. It is better to give thorough preparation to the soil and plant young trees.

Mr. Meehan—To attain this end, would plant both old and young trees. When the younger trees had attained sufficient size the older ones, having served the purpose of immediate effect and shade, can be removed.

The Silver Poplar, though very beautiful in foliage, is objectionable from its propensity to throw up young suckers, and disfigure the lawn. It answers well along a paved street.

Mr. Satterthwait—What we need is rapidly growing trees. The moving of large deciduous trees is a great folly, and should never be done. Evergreens, Norways in particular, can be easily and safely moved, 10 feet high.

Mr. Meehan—The Holly can be transplanted well in August, if cut in severely, and the leaves all removed. In spring or late autumn they often fail.

Mr. Hayes—Transplanted a number of Hollies, in the spring of 1840, from Delaware to one of the public squares in Philadelphia; they all failed, although moved with great care and well treated. Has made several other trials, but could never succeed with them. The Tulip Poplar, Mr. Saunders says, should be cut back to a bare stump, when transplanted.

Mr. Meehan—Large trees, no matter how large, if growing thriftily at the time of transplanting, and skillfully moved, will thrive.

Mr. Satterthwait—Tulip Poplars, if taken when small, and moved once or twice in the nursery, say every two years, get fibrous-rooted, and are then easily transplanted and flourish afterwards. Is there any advantage in shortening in evergreens is transplanting?

Mr. Meehan—Yes, with all kinds. You check evaporation by cutting off the branches; this is more the case with evergreens than deciduous trees. I make a practice of cutting back all evergreens in transplanting, when there is risk.

ON THE PRESERVATION OF FOOD.

BY PROF. J. B. BOOTH,

Read before Pennsylvania Hort. Society, Sept. 1st.

Holding the appointment of Professor of Horticultural Chemistry to the Horticultural Society, I may be permitted here to state publicly an opinion, which I have often privately stated to members of the Society, that while some chemists are disposed to overrate the value of Chemistry, as applied to Horticulture, many practical men underrate it. That Chemistry has, as yet, barely effected an entrance upon the subject of the growth of plants; that discoveries so far are as applicable to Agriculture as to Horticulture; that the line of observation and experiment has chiefly been in the direction of manures; and that the Chemist, without excess of sanguine expectations, can foresee that Chemistry will eventually play an important part in cultivating the products of the soil.

Since Horticulture deals almost exclusively in organic life, the present youthful condition of organic chemistry allows a very limited application of chemical science to the art of modifying the productions of plant-life, by garden-culture. All admit that the soil performs important functions in the growth of plants, and yet I entertain a very meagre opinion on the present *practical* value of the analysis of soils. Notwithstanding the large amount of time and ability devoted by Chemists and Agriculturists to the subject of manures, our progress in this path has been slow, although something positive has been gained. The art of modifying the growth of plants, so as to obtain this or that vegetable principle, contained in the leaf, root, stem or fruit, in greater quantity and of better quality, is an art, as yet in embryo. On whatever side of Horticulture I look, I perceive a vast void in the applications of Chemistry, which only time, patience, diligence and well directed experiment, can fill up in the future. Nevertheless we should all try to add our grain to the heap of human knowl-

edge, by thoughtful experiment and reflective observation, even as our present stage of civilization is due to the labors of those who have gone before us.

To show that Chemistry is not so far in the rear as some persons assume, I may mention a few points, in which it has obtained, by artificial means, the productions of the vegetable kingdom. A portion of the oil of Winter-green, (*Gaultheria procumbens*) has been made in Paris, France, from Willow-bark, and one of the products arising from distilling wood, but the plant still beats the Chemist in economy. Oxalic acid, once obtained exclusively from plants, is now wholly made artificially from molasses, &c. Essential oil of mustard has been made artificially. One Chemist changed oil of turpentine into the agreeable oil of lemons, while it has been the practice of unscrupulous persons to adulterate oil of lemons with that of turpentine, unwittingly practicing on one homœopathic principle of *like to like*, while they conveniently overlooked the other principle of putting in an infinitesimal dose of turpentine by way of improving the oil of lemons. Bituminous coal offers in its products of distillation a fair field for the chemist to strive with the modern vegetable kingdom in its useful products. Chemists have made alcohol from coal-gas, and the fire used to make the gas, has transferred its properties to what by some is termed, *liquid fire*, although others regard its use as producing illumination.

The beautiful dyes recently made from coal; and peculiar composition and properties, most clearly indicate to the chemist, that at no distant day, Indigo-blue will issued from the laboratory, quite as perfect as from the Indigofera. Further, we need not feel anxiety at the reckless waste of the Chinchona forests in South America, for there is the strongest reason for asserting, that quinine will be supplied to the Medical Profession by the manufacturing chemist. Time would fail me to enumerate what have been, and what will certainly be, the useful results of modern organic chemistry. We may however infer from what has been said, that since we know how to produce organic principles by art, the same ability devoted to horticulture, would result in making plants produce them in greater quantity and perfection. In a few instances where it has been tried, success has crowned the undertaking.

In the limited field of Horticultural Chemistry, I have selected as a subject of remark, the Preservation of Food, on which chemistry is beginning to throw some light, and although the illumination is feeble,

it is better than wholly groping in the dark.

I propose to consider the modes by which the products of organic life, destined for food, may be preserved unaltered, or nearly so, for a lengthened period of time. Life contains within itself the germs of decay, and the moment life ceases, pure chemical action exerts its power uncontrolled, until the complex combinations of organized structure are resolved into the simplest chemical compounds or elements. Since this action is only exerted on particles of matter in a condition of motion, the liquid state is the most favorable, and hence the juices of plants offer a medium for the exercise of decomposing chemical action. By removing the water, the tendency to decomposition is diminished or destroyed, and therefore desiccation is one of the methods adopted for preserving the products of horticulture.

Again, decomposition is observed to take place by an internal change in organized matter, by fermentation, putrefaction, mould, &c., this change would seem to be produced, or at least commenced, by the agency of the air. If we can, more or less, perfectly exclude the air from organic matter, under circumstances to be pointed out, decomposition may be prevented or postponed, in spite of moisture present, and thus food may be preserved for a considerable period of time.

The two modes then we propose to consider, are first, by the exclusion of moisture, and second, when moisture is present.

1. Preservation by drying. Although this method has been known and used from the earliest times in a few limited cases, dried herbs, dried fruit, &c., yet it has only recently received an impetus that reduces the process to an extended manufacturing operation. By this method not only the less decomposable products of the vegetable kingdom, roots, &c. may be preserved longer than usual, but even animal products, ever sensitive to chemical agency, to putrefaction, may be kept in dry condition, ready at any moment to be resolved into their soft juicy state, almost as perfect as in their usual fresh condition. To give a more detailed view of the process, I submit herewith the patent of "Masson," as contained among English Reports of Patents, for 12th of November, 1850. The main operations in the process are, first, evaporating off water by artificial heat, and then, in the case of bulky vegetable matter, compressing it into a small bulk by a powerful press, the screw, the hydraulic press or other means. The advantages of the process are first removing water, as one great medium of chemical

action, and second, compressing into so compact a mass, that the air, the initiator of chemical changes, can only affect the surface of a mass of organic matter.

When we consider the weeks and months spent on the ocean, away from the productions of civilized life, and out of the reach of the daily products of the soil—or if we follow the foot-sore caravan, travelling over the interior waste and wilderness of Asia, Africa and America, where fresh food can be obtained only in small amount and at rare intervals—or if we consider the distance of the vast and productive interior of our own land from the seaboard, and the cost of transporting to the latter the bulky products of the soil, with their large proportion of water—we can directly infer the value of preserving food by the method of desiccation and compression.

The Crimean War gave an opportunity of executing this process on a manufacturing scale, where dried food was used for the first time, as a reliable article of diet for the soldier by the Russians and Allies, in 1865. Col. Delafield's Report on the art of the war in Europe (1854-5-6) specifies some details, which we copy. The French army was supplied with 7,894,920 lbs. *a.d.p.* exclusive of hospital supplies, and the proportions were dried vegetables, 424,600—compressed vegetables, prepared by Chollet, 8520,180—conservé of beef, 6,718,140 lbs. Total, 3,947 net tons.) Of the conservé of beef, 888,800 lbs., were in powder or finely ground gelatine. At Chollet's the vegetables were cut into thin slices, dried by heat and compressed. To show the degree of dryness attained, a single ration of dried potatoes weighed about 1½ oz. *a.d.p.*, including cases—one ration of mixed spring vegetables, ½ oz.—one ration of Julienne soup, about 1 oz. and less. Forty-thousand rations of these vegetables, examined by Col. Delafield, occupied a cubic metre, or about 35½ cubic feet, and weighed 4,000 lbs. (2 net tons) including the packing cases. The prices at which the rations can be furnished are sufficient to prove the value of the process:

(The prices are derived from published
Prices Current.)

	PRICE PER RATION.	
	Best quality	Ordinary.
Turnips, Parsnips, Spinach, Celery, Onions, etc. (average)		2½ to 3 cts
Cauliflower, Peas, Beans, Artichoke, etc.	5½ to 8 cts.	1½ to 1¾ "
Potatoes and mixed vegetables,	1½ to 1¾ "	1½ to 1¾ "
Julienne, for soup,	5 cts.	2½ to 4 cts

Thus, a good moderate dinner of two courses, soup and vegetables, may be had for 4 cents, and a sumptuous entertainment for 10 @ 13 cents. Perhaps the Gardeners in our Society may not like

the low prices I state for their carefully tended productions, and so may condemn the whole process of desiccation and compression; nevertheless I am bound state facts. I will pacify them, however, by reminding them that the raising of vegetables for immediate use, will not be affected by the process, which has reference to a sort of manufacture of vegetable, not raising them by a careful education.

2. The second method I proposed to consider, is to preserve food with its moisture, *i.e.* while in a condition favorable to decomposition. Numberless experiments show that the air is the chief cause of decomposition, and the several varieties of decomposition are known as fermentation, putrefaction and mould. We are at present disposed to regard all these as modifications of the same kind of action, and hence some chemists term them all fermentation, which they choose as the type of the others. A microscopic examination of mould confirms the conclusion of the naked eye, that mould is a plant, of a fungus character. The like observation is made by a minute study of the vinous fermentation. Mother of vinegar is a mouldy plant, proved to grow at the expense of foreign matter in the vinegar, and to destroy the acetic acid, eventually leaving pure water. Putrefaction would appear to be more complex in its character, accompanied, and caused by the growth of genera of infusory animals. The scientific examination of many of the infusories has developed the singular fact or conclusion, that they approach the lowest forms of plant life so closely, as not to be readily distinguished from them. In fact, eminent observers have classed them in plants, and others as animals, but the prevailing view at present is that they are the lowest forms of animal life. May I be allowed to make an imaginative comparison, and show the reflection of one part of nature by another? Then I would compare the cycle of life in plant and animal, jointly considered, to the circulation of the blood. The arterial blood is animal, consuming the carbon, etc., of food, and thus receiving activity through chemical energy, it is forcibly transmitted to the remotest parts of the system, terminating its course in minute tubes, which again open and expand into veins. It there becomes plant life, to be again changed at its source into arterial blood. In all nature the termination of animal life is the source of plant vitality; and, to complete the cycle, animals derive their first nourishment from plants. So also in putrefaction: a low grade of animals is accompanied or followed by a low grade of plants, which in their turn originate

a higher order, to serve as food for higher animals.

Low forms of life are either the origin or concomitant of all kinds of fermentation. That air is necessary to start fermentation is universally admitted, and the older theory of its action, was that the oxygen of the air by producing the ordinary chemical change of oxidation, *induced* a further internal change in the fermentable substance, which then continued its operation independent of the further aid of oxygen. I think that the experiments of Schwann, in 1837, overturned this theory. He exposed freshly boiled meat-extract and fermentable liquid to the action of air, which had been previously ignited, and neither putrefaction nor fermentation ensued. Since the oxygen of the air was not affected by the ignition, and only organic matter destroyed. Schwann inferred that oxygen was not the cause, or at least, not the sole cause of fermentation, but that it was due to organic matter floating in the air; in fact to the spores of mould-plants and infusories. The subject of fermentation and the like, have since been more minutely investigated by Schroder, Pasteur and others, and especially by Pasteur, whose conclusions confirm the experiments of Schwann, and extend our knowledge still further. Schroder and VonDusch boiled meat-extract, milk, fermentable liquid, &c. in glass flask, and inserted a plug previously heated loose cotton in the throat, so that the air entering, as the flask cooled, was filtered through the cotton. Their conclusions from numerous experiments, are, that nearly all organic bodies, such as blood, fibrin, albumen, casein, curd, milk-sugar, starch-sugar, cane-sugar, starch-clyster, urine, &c., when heated to boiling in a flask, and then stopped by a loose cotton plug, may keep for months and years unaltered, although the air, filtered through cotton, has free access; that meat-extract, milk and yolk of egg, do sometimes keep, but do not keep in a majority of cases; that even in the last named substances, mould is never formed; and that the fermentation which does take place in meat-extract, under a cotton filter, is different from putrefaction in open air. They observed that the brown liquid from meat putrefied in the open air abounded in the infusories *Fibrio lineola*, and *Monas termo*, while that, putrefied in air filtered through cotton, contained no *Fibrio lineola* and *Monas termo* could not be detected in it with certainty.

We have been favored with the conclusions of Pasteur, from recent experiments, only within the last few months, but they are only conclusions without the details of experiment. Nevertheless,

we may safely accept the assertion of such an investigator, as truth. He says "that putrefaction is determined by the infusory genus *Vibro*—that one class cannot exist without oxygen (*Bacteria*)—and the other without oxygen (*Vibrios*.) In some cases, when the former (*Bacteria*) causes a pellicle to form on the surface of the liquid, and so prevents the absorption of oxygen by the interior, then two processes are progressing simultaneously: in the interior, *vibrios* transform nitrogenous matter into more simple, but still complex bodies, while on the exterior, *Bacterias* burn up the matter, producing the simplest compounds, water, carbonic acid and ammonia.

In putting up fruit and vegetables in what is termed "in the fresh way" *i. e.* by boiling and sealing while hot, I have observed that when mould is formed on the surface in the usual glass jars, it is not easy to make the substance (fruit, &c.) undergo subsequently the alcoholic fermentation, even if air be admitted, and I inferred that the coating of mould acted as a filter.

I endeavored to put up Okra in the fresh way, but found the utmost difficulty in preventing its undergoing a kind of fermentation, a mouldy kind predominating. In some cases the cemented cork was simply pushed off, and the mass remained quiet, although exposed to the air. I allowed several of these bottles to remain uncovered in a cellar from August until January, and found that after removing the top layer of mould, the residue of the Okra was as fresh in taste and odor as when put up in August. This confirmed my conclusion, that the mould on the surface acted as a filter, and so prevented the spores of other plants or animals from penetrating the interior.

From the facts presented above, we may draw some practical conclusions on the processes of putting up fruits, vegetables, &c. in the fresh way. Since decomposition results from the microscopic life, by the destruction of the spores and germs of such life, and their further exclusion from vegetable substances, decomposition may be prevented. This is usually effected in two ways, either by heating the substance in a large vessel, boiling or nearly so, and then transferring it while hot to glass or stone-ware jars or tin cases, which are immediately sealed—or by putting the substance, with sufficient liquid, water or syrup, directly into the jars, closing them air-tight, as it is termed, and then heating the jars and contents in a water bath. Either of these may be successful, but the latter is most certainly so, because after destroying organic life, there is no opportunity of the re-entrance of fresh spores,

except through minute cracks where the covers are not put on absolutely air-tight, and these cracks are generally so fine that the entering air would be filtered, and the spores left on the outside. As a domestic process, the former is more convenient and rapid, and may be equally successful by guarding one or two points:—The substance to be preserved should be heated to about the boiling point, and the transferring ladle, the bottles and other covers should all be scalded immediately before using them, the jars being filled with scalding water, and remaining filled until wanted, and the covers likewise kept in water until used. With these precautions of destroying organic life in the substance, jars and utensils employed, and immediately closing the jars, this process is as effectual as the former.

I may here mention that I long ago found that very few jars under whatever patent, are absolutely air-tight, although they may appear so at first; and even in the care of soldering tin, although the vessels may be made absolutely air-tight, yet there is no certainty that a small portion of air containing a living spore, may not remain in the case, unless it has been thoroughly boiled, or that it may not enter during soldering, unless an abundant jet of scalding steam is ensuing at the moment of soldering. From the facts I have presented in the experiments of Schwann, Schroder and Pasteur, it is evident that, for substances that are not very sensitive to decomposition, such as fruits and most vegetables, a perfect exclusion of air is not absolutely necessary to their preservation. I once tried the experiment of using thick molasses, as a substance not liable to decomposition itself, and as an effectual excluder of air. Some sound peaches uncooked put up into molasses in September and taken out in January, had precisely the taste of fresh peaches. They were shriveled by the loss of water through the remnant of the stem, while the molasses became thinner from the water of the peach.

The facts I have presented and the accompanying remarks, are offered to the society with the view of inducing experiment by our members, as the best means of advancing our knowledge in the art of preserving food.

INSECTS.

BY J. STAUFFER, LANCASTER, PA.

Having had a certain Larva sent me from Chester Valley, also from J. C. Baldwin, of Downingtown, and others found in this city by Hon. Judge Hays, and several other citizens; to whom

this rather peculiar and somewhat dangerous caterpillar is new, I concluded to furnish you with a description of it for publication.

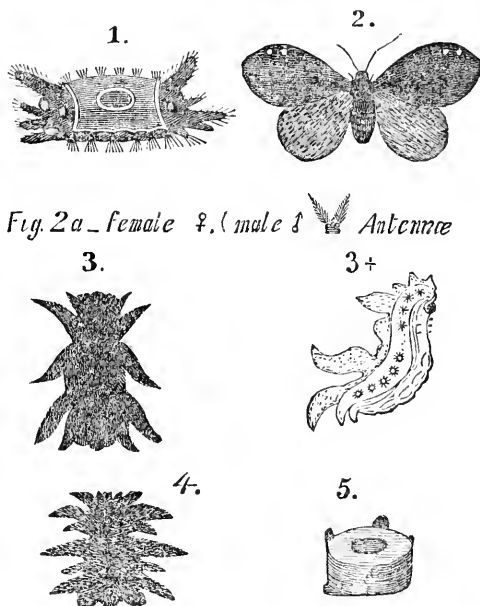


Fig. 2a—female ♀, (male ♂) Antennae

1 Larva of *Empretia stimulea*. 2 The female moth or imago. 3 A singular caterpillar, found at the base of an Oak-tree, September 1, 1856. 3* Shows the underside, with a ventral flesh-colored lateral, elevated margin, over which and beneath the robe-like hairy back; there is a series of wart-like protuberances, beset with minute bristles; the scolloped flaps appear, at first sight, like an extraneous fur covering, of a minute animal laid over it, but is actually a part of the larva. 4 Is very similar in character, but differing in structure. 5 Is the cocoon, into which fig. 4 passed, but perished for me, before its final development. I seriously question whether 3 and 4 have ever been described; they however belong to the same natural group as fig. 1.

My first acquaintance with the larva, dates back to 1855, when engaged in the drug business, a neighbor lady, being in her garden among Indian corn, got one on her neck and shoulder, which caused a high degree of inflammation; which the application of a solution of acetate of lead, subdued in several applications, and by removing a few of the spiculæ lodged in the skin. Mr. Baldwin, in his letter to me, says, "the fine bristles coming in contact with the hand, produced quite a severe pain, and inflammation immediately follows to a considerable distance up the arm—and adds, "they appear to possess a power to communicate something very deleterious, even worse so than the wasp, hornet, etc." I find, on close inspection under a powerful microscope, that the bristles are minutely barbed in a somewhat spiral manner, and the outer sharply pointed end, articulated to the shaft.

Since, however, Dr. B. Clemens, of Easton, Pa., has given a very accurate description of the larva and its moth, in the proceedings of the Academy of Natural Sciences, of Philadelphia, in vol. xii. page 158-59. I may as well copy his own words, in parts, with a note of my own.

He names it *Empretia stimulea*. Body and forewings uniform dark ferruginous, with two small sub-apical white spots, and in the two more near the base of the wing, beneath the median nervure.

Head wings pale reddish brown. Antennæ of males, basal half pectinated. *Female* simple. *Larva*—body semicylindrical, truncated obliquely before and behind, with a pair of anterior, long, fleshy, subvascular slenderly spiral horns, a pair smaller beneath them, above the head; a posterior similar pair, and a small oval pair, beneath them.

The superventral papulae are rather large and densely spined. After the last moulting the longer horns become moderate in length."

"The portion of the body between the anterior and posterior horn is a fine bright green color, bordered anteriorly and superventrally by white, with a central, dorsal, oval reddish brown patch, bordered with white, which color is again edged by a black line. The horns, papulae and anterior portion of the body are reddish brown, with a small yellow spot between the anterior horns, while the posterior pair are placed in a yellow patch."

I would state, that all the specimens I have examined (which were from various localities, during a term of eight years,) show the yellow spot both between the posterior and anterior horns, and the posterior horns are *not* placed in the yellow patch on each side, but directly above them on a reddish brown base.

Dr. Clemens, also states, that "the spines with which the horns are supplied, produce an exceeding painful sensation when they come in contact with the back of the hand, or any portion of the body where the skin is thin." Found on a great variety of plants, fruit trees, the rose, Indian corn, (*Zea mays*) and a number of other plants," among which you may include the grape vine, on my authority.

He makes no mention of the minute pectoral legs of the larva, and their want of proper pro-legs, being supplied merely by a few protuberances, having a soft pliable membrane, supposed to be covered with a kind of glutinous matter, by means of which it rather slides than creeps over the surface of a body. They easily climb up the perpendicular sides of polished glass, in a vial, and adhere at rest in that position.

They belong to the family *Limacodes* of Duncan, the Slug Catterpillar or Fam. Conchilspodidae of other authors.

By their abundance this year, they may prove to become a pest to fruit culturists, having never known them to be so widely extended as at this season, heretofore they were but few and far between, rather a curiosity, than a source of annoyance; and I deem it proper that the insect should be known, as few have access to the publications of the Academy of Natural Sciences, etc.

I have several other larvæ, figured in my collection, belonging to this family—which I have never yet seen described, and have failed to rear the perfect moth from them, thus far.

ROGERS' NO. 15 GRAPE.

NOTE FROM MESSRS. M. P. WILDER & BAKER,
DORCHESTER, MASS.

Permit us to correct a mistake, occurring in the November number of the *Gardener's Monthly*, in which it is mentioned, that the plate of Roger's Hybrid, No. 15, which is there figured, was taken from a bunch fruited in the nursery of Messrs. Lindley & Hinks.

If we do not mistake, it is a copy of a plate of our own, which we had executed at considerable expense, in 1861, from a bunch fruited in the garden of Mr. Wm. H. Harrington, of Salem, Mass., who has the remarkable vine of that number, which has this year exhibited such wonderful bearing qualities, and that combined with great vigor. We send you a copy of our grape circular, and think you will find the two to be identical.

We doubt very much whether Messrs. Lindley & Hinks have ever fruited this number of the Roger's Hybrid.

[It is but justice to Lindley & Hinks to say, that they did not tell us they grew the bunch from which the cut was made. We were under the impression that they had fruited it, and asked them to furnish us a copy, and it was our own inference, that it was from a fruit grown by them.—ED.]



The Gardener's Monthly.

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✉ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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AMERICAN RASPBERRIES.

We entertain no foolish prejudices against foreign varieties of fruits. It is a dangerous doctrine which teaches that fruits raised in a locality must be better than others introduced into it. It is not true of either fruits or plants. American History contradicts it.

It is our misfortune to have few original observers. Hence, most of our theories are derived from foreign sources. The men who founded the London Horticultural Society, possessed rare characters. No body of Horticulturists ever comprised such choice treasures of intelligent and energetic men, as that. The very errors of these men have become laws, too sacred almost to question.

The wearing out of varieties, acclimatization, and this one of peculiar adaptation to native locality, originated particularly with them. Their opinions on these questions are quoted to this day, and by Americans, as authorities from whose dicta there is no appeal. Yet American experience throws strong doubts on theories founded exclusively on European observation.

Few doctrines are believed more firmly there than that everything does best in the locality where nature placed it. Possibly there may be a difference between nature and ourselves as to what we shall consider "doing best."

We want, perhaps, rich luxuriant growth, as our idea of superiority; while nature persists in considering it best for her purpose, to have lean, thin, wiry foliage. Give us our idea of what is best; and we will undertake to beat nature any day. She may declare her austere crabs and puckery pears models of health, and images for our imitation; but we would rather have a luscious, rich and juicy fruit with a risk of disease, than nature's own choicest productions as she gives them to us. Taken even its broadest sense, things do not always do better where nature places them. Amongst grasses, for instance, the flat stalked meadow grass

(*Boa compressa*) is usually found on walls or poor dry soils. It seldom grows there more than six inches high; but remove it to a richer place, and mark how vast the improvement! See again how vastly some grasses are improved by removal to another climate. No grass that we have ever tried, yields hay with a due regard to quality and quantity, like the Timothy grass, (*Phleum pratense*), yet in its native British soil, it is entirely worthless for this purpose. Nothing is there found equal to the Rye grass, (*Lolium italicum*) a grass as foreign to that country as Timothy is to us. Almost all the weeds, to, that seem to thrive most luxuriously in our soils are foreigners, and the majority of them do far better than in their own native soils. The Celandine, does not grow to near the size in its native chalky British hills, it does around old American homesteads; and the Plantain, (*Plantago major*), which follows the emigrant from his own country to this with such close pertinacity, as to get from our Indians the name of "white man's foot-prints," more nearly resembles dock leaves, for size, in some localities than the original plant of Europe.

We rather think nature likes change. Two-thirds of our commonest weeds are from other lands. They have rooted out the aborigines, as closely as man has his own species. And it has ever been the lesson of history, that any race of men, animals or plants, that once gets a foot-hold on a soil not its own, roots out its original possessor as surely as the Norway rat abounds here to the detriment of its American predecessors.

In fruits it is also true. We have allowed our theories respecting foreign fruits to so influence us, that few of them have had a fair chance. It is only quite recently, against years of opposition, that Foreign Strawberries have been proved the equals of Americans. Triomphe de Gand now holds a high place; and even our Boston friends, with all their strong prejudice for Hovey's Seedling, think there may be some good in La Constante for all.

So in Apples. As we write, the report comes to us, that the Ribston Pippin—England's most favored kind—which has universally been thought worthless here—has proved to be one of the very best, perhaps the best variety for Illinois; and if a fair trial be given it, no doubt it will get a good character elsewhere. It is a singular commentary on this prejudice against foreign apples, that the only one that seems to do universally well should be a foreigner—the Red Astrachan.

Our best Pear, the Bartlett, is also a foreigner; and we may say that in the country where Pears

are most famous, the Pear is a foreigner, for there is no doubt that, although wild enough in France, the Pear originally came from Asia.

All we desire is to warn our readers against deducing general rules from special facts; and thus fall into the errors of our European predecessors; for in some instances, native varieties do evidently better than introductions. Nothing but almost total failure has attended the cultivation of foreign grapes in the open air with us. Even in localities where they are said to do well, they do worse now than years ago. About York for instance, in this State, where we have had some few successful instances, and very successful ones they were, pointed out to us last year; they are not as common as they were years ago. Previous to 1830 there were over thirty vineyards mostly of foreign grapes, in existence within twenty miles of that borough; and with the most encouraging reports given of their successful operations; but notwithstanding the remarkable growth of York in wealth, population and intelligent progress; we doubt if there is a single vineyard of foreign grapes—of age and extent enough to warrant much being said of it, at present in existence there. The rule may be considered a fair one, that grapes of foreign origin and race, will not do in American soil and climate.

We have taken a long text for a short sermon—*American Raspberries.*

The foreign race will die down; will milder; will give us in many ways "peaks of trouble." American varieties are susceptible of improvement, are hardy and vigorous, bear like poverty, and why not show them a chance?

We have a fair start in the Purple Cane. Even as it is, an Albany Seedling Strawberry man would not want a much better one; and to a Delaware Grape man there would be some little encouragement in there being something of a mystery about its origin. Like that unfortunate foot ball, it might get kicked across the channel and back again, to the astonishment of the "marines," and a first-class sensation be got up on the strength of it; so that though we might be sometimes disgusted with the raspings of Rasp"ology," as we are at times with Grapes and Grape"ology," American Raspberries like American Grapes would come out vastly improved in the end, and much good ensue.

Last year when the Philadelphia Raspberry was sent to us for examination, we mentally exclaimed, "as large as Fastolf, and very much like it." But we were told, when suggesting that something better than what existed was the desideratum, "it is quite hardy," and again we thought, "so are all

seedlings more or less." We were not told that it was of the race of Purple canes, as we have since heard it is. The canes certainly look like it, and our remembrance of the fruit adds to the evidence. We cannot say of our own knowledge that it is until we see it again in growth; but should it prove so, we look on its introduction, like the Bland amongst grapes, as marking a new era in the history of Raspberry culture.

ABIES MENZIESII.

During the past years, great numbers of new evergreens have been received from Japan and the Pacific coast,—and nearly all of great beauty. But most of them have some objections made against them. Some are too coarse, or grow too slow, or are too dwarf; or, if none of these, perhaps not hardy enough to go through very severe winters without suffering somewhat.

Notwithstanding the millions of dollars spent on experiments with rare evergreens, we have still to depend on the Balm and Silver Firs, Austrian and Scotch Pines, and the Norway and Hemlock Spruces, as our main trees for lawn evergreens.

But there is one plant that really deserves more attention: and that is the Californian White Spruce—*Abies Menziesii.*

It has the great merit of being very distinct from any thing we have in cultivation; and by its peculiar beauty attracts the attention of the dullest observer. The under surface of the leaves are of a deep silvery white, and the upper surface pale green. The main branches have a rigid upright growth, while the smaller branchlets depend somewhat. To the observer, therefore, some of the leaves appear green and others silvery, giving on the whole a variegated appearance, far more natural than the best of the really variegated evergreens presents. The wood is of a deep chestnut brown, and adds to the picturesque appearance.

But to all this beauty is added a vigor of growth, and a perfect hardiness that make it a tree of the most desirable character. We saw a tree recently planted six years ago, then 3 feet high, that is now 15, and with a perfectly straight leader, and as fine a conical form as could be desired. This was growing on a low piece of ground, very wet in winter, but with a sandy sub-soil. We saw a very fine specimen on the grounds of David Landreth, Esq., near Bristol, in much drier ground than the one above referred to, and have no doubt it is a tree that will adapt itself to any soil; but we should be glad to hear from any of our friends that have

had experience with it in other parts of the country. Perhaps Mr. Sargent could tell us of its character on the Hudson; or Mr. Hunnewell, at Boston.

There is no reason why it should not become common, and comparatively cheap; for although it is expensive to get the seed from its native country; it is one of the easiest of the pine tribe to raise from cuttings; and besides has the merit of making good leaders from the plants so raised; which most of the firs do with difficulty.

Though called in many catalogues California White Spruce it is quite a northern plant. Its limit south we believe to be in the northern part of the state, while it extends a long way higher up along the coast. Douglass first found it at the north of the Columbia River, and we received seed last year from Dr. Parry, collected by him in his trip to the Rocky Mountains.

It has been in England about thirty years, and as there are many fine plants in the United States, it is singular that its merit as a popular evergreen has been so long overlooked. We should be glad to know who has the finest one. If Mr. Landreth would furnish us with the measurement of his, we should be very much obliged.

HISTORY OF THE TUBEROSE.

We promised to give some additional particulars from a memoir by Salisbury, in the London Horticultural Society's transactions.

The first account Salisbury could find of the Tuberose, was in L'Eccluse's History of Plants, where it appears that he received a root on the 1st of December, 1594, from Barnard Paludanus, a Physician at Rome, to whom it was sent by Simon de Tovar, as stated in our notice, who resided at Seville; and there seems to be no doubt, that it was not known much before this time in Europe, as Salisbury remarks.

The most interesting part of the memoir relates to its native country.

He quotes Linnæus as saying, it was brought from the East Indies; Kamel, that it was brought to the Island of Luzome by the Spaniards, from Mexico; Parkinson, who makes two species, one tall and the other dwarf, that "they both grow naturally in the West Indies, from whence they were first brought to Spain;" Redoute, that it was brought from Persia; The authors of *Flora Peruviana*, that it is cultivated in gardens in America; and Hernandez, that it grows in the cool and temperate regions in the older parts of the new world. Salisbury himself inclines to the latter

as being the only one whose opinions seems to result from personal observation; but as Dr. Gray remarks, in our last number, a species has since been discovered in Brazil, and another in Mexico, and may not Hernandez have had reference to the latter; especially as no subsequent author seems to have confirmed his observations?

It is a very remarkable fact, that authors so nearly contemporary, should disagree as to its origin so widely. From what we know of the time it takes to improve plants by cultivation; and of the Tuberose, that with all its long cultivation, it seems so little inclined to vary; it is remarkable that the improved form should have been possessed at one by Simon de Tovar, if we adopt Link's idea that *P. gracilis* is probably the parent of the cultivated tuberose.

In tracing the history of plants, the names often afford a clue when all others are lost. This was what we hoped to gain by questioning the derivation of "Polianthes." Salisbury says, the tuberose "is distinguished in the East Indies, by the poetical title of *Sandal Malam*, or *Intriguer of the Night*;" and a friend suggests that it usually takes some time for a plant to travel from Europe to the East Indies, and still more time to get so abundant as to be well known by a common name; but as the authority quoted for this name, as then existing in the East Indies, wrote in 1720, or nearly one hundred and thirty years after the earliest date given for its European introduction, there was time for its name and abundance; the name, no doubt, originated from its well known character of emitting a much stronger perfume towards evening, than at any other period of the day.

It was certainly in the East Indies before 1652, as plants were growing in France at that date, brought from the East Indies by Father Minuti. Probably it was taken to the East Indies by the Dutch, who Rumphius positively says, carried it to Amboina from Batavia in 1674.

As our original article was intended to be suggestive, and to excite enquiry on an evidently obscure, but interesting subject; it was written without any reference to authorities, other than what occurred to us when we wrote. We are pleased that it has resulted in bringing before our readers all that is known of the tuberose; which, though still undecisive as to its native country and origin in its present form, yet brings the former nearer to the American continent than we were willing to admit when we first wrote.

McDonald, in his history, speaks of a varie-

Scraps and Queries.

✂ Communications for this department must reach the Editor on or before the 10th of the month.

✂ The Editor cannot answer letters for this department privately.

GROWTH OF ROGERS' HYBRID GRAPES.—We received from Lindley & Hinks, Bridgeport, Conn., specimens of Rogers' No. 15 and 19, to show the vigorous character of these varieties—a Delaware of the same age being sent for comparison.

The vines were started from single eyes, on the 8th of February, planted out of doors in June, and layered in August.

The Delaware is as good as we usually see them the first year—as stout as strong straws. The Hybrids are as strong as Concord layers usually are, two feet long, and average girth 1½ inches.

From reports reaching us from all quarters, the “Rogers' Hybrids” are the rising stars in the grape firmament.

SEEDLESS GRAPE—*J. M. F., Dallas City, Ill.*—Can you inform me where the Seedless Grape can be obtained?

[Have any of our Grape-growers this variety in their collections?]

RICHLAND PLUM AND GRAPE VINE INSECTS.—I wish to get some information concerning the Richland Plum. Is it less troubled by the curculio than the Lombard or the old German Prune are? and does it usually produce a fair crop where there is no particular attention paid to destroy the curculio? Is it like the Damson, a good variety for making preserves? (1)

Last spring I purchased two Creveling Grape Vines, from a New York Nursery, and when planting them, I noticed that there were many little bunches or knots upon the roots, unlike anything which I had seen before. Examining them a few days since, I again found them upon the young roots. I enclose a sample of them in a piece of tinfoil, and wish to ask what they are? whether they are caused by some injurious insect, or something else. Can you give a remedy for them? (2)

(1) The Richland Plum is attacked by curculio, but does not rot in consequence, as easily as some others. Probably all hard flesh plums are safer in this respect.

(2) The knots are often seen on the grape vine roots. Theoretically they should be injurious; but we have never detected any serious injury in fact.

HORTICULTURAL BOOKS.—*J. F., Edwardsville, Indiana.*

1st. Please inform me as a subscriber, what is the best treatise on the propagation and culture of flowers?

2d. The best book treating on the care and management of ornamental trees, from the propagation, &c.?

3d. What is perhaps the most worthy book on the propagation and culture of hardy grapes in the open air?

4th. Is there any work extant, treating in detail on the management of trees, plants, &c. in the nursery? P. Barry treats of it in his fruit garden, but very hurriedly.

[1st. Breck's Book of Flowers; or, Buist's Flower Garden Directory, would probably suit you.

2d. Meehan's Ornamental Trees, is the only American work on the subject.

3d. Phinn's Open Air Grape Culture, embraces the experience of most grape growers, up to the present time.

4. Barry's Fruit Garden, is the best of the class.

NAMES OF PLANTS.—*A Subscriber, Cuyahoga Falls, Ills.*

Your plant is probably *Caladium esculentum*.

C. edulum we take to be but a variety of *C. esculentum*.

Cyanophyllum, belongs to the order melastomaceæ.

HOT WATER PIPES.—*J. McM., Chicago, Ills.*

Will the Editor please to let me know through the *Monthly*, to what height I should fill the water in the pipe, in the Grapery, before I start the fire.

[The pipes and boiler may be quite full. There will be room in the supply tank or air-pipe for expansion.]

EVERGREENS IN POTS OR TUBS.—*Many Subscribers.*—We will reply to your inquiries in an early number.

ROMAN APPLES.—Twenty-two varieties were known to the ancient Romans.

NATIVE PLACE OF THE DAHLIA.—Hernandez, in his History of Mexico, says, it grows in the mountains of Quauhhuahue, and is called *Acocolti* by the Mexicans. Cavanilles flowered it first, in his garden at Madrid, in 1790.

Books, Catalogues, &c.

THE ILLUSTRATED ANNUAL REGISTER OF RURAL AFFAIRS FOR 1864. Luther Tucker & Son, Albany, New York.

THE RURAL ANNUAL AND HORTICULTURAL DIRECTORY, for 1864. Jos. Harris, Rochester, N. Y.

These little serials, embracing the characters of an almanack, a practical guide in daily pursuits, as well as in some degree a record of annual improvement in rural affairs, have become almost necessities to the practical man, even the most experienced finding it useful to have what they well know kept forward for their daily remembrance; and to the novice they are far better than the elaborate treatises of exhaustive writers.

The contents of each are so varied that all who can afford it should get them both.

REPORT OF THE COMMISSIONER OF AGRICULTURE—NATIONAL EXPERIMENTAL GARDEN.

We have so often expressed our want of confidence in any thing in a horticultural way, worthy of our national character, emanating from government control, that we need not here repeat our views. Yet, perhaps, it is the wisest principle, that if we cannot have what we deserve, we should at any rate get what we can; and in this spirit we have urged our readers to do all in their power to give the efforts of the present Commissioner, and his able assistants all the aid possible in their almost sisyphian efforts to make their department useful. No men could probably have done more than they have. The following extract from the last report, will interest our readers:

"While the introduction and propagation of new and valuable plants will always command a large share of attention as one of the principal objects of the garden, still it is believed that investigations having in view a more thorough knowledge of the diseases of plants, especially with reference to those of our more valuable and generally cultivated fruits, should receive more attention than formerly. Acting upon this belief, and being convinced of the immense importance of the grape crop as a fruit for general consumption, and more particularly in view of the extraordinary increasing interest now developing in regard to the production of native vines, an extensive correspondence has been opened with vineyardists in all parts of the country for the purpose of comparing the result of experience and observation in regard to the influences of soil and

climate, as also the effects of varied treatment and the estimation of varieties. Much valuable information has thus been contributed, embracing a collection of facts, without which it would be impossible to reach intelligent conclusions.

"It has been considered advisable, as one of the best modes of extending interest in pomological and horticultural pursuits, to establish examples in order to exhibit practically the results of varied modes of treatment and applications of systems. This feature is being extended, and is found to be of peculiar and special interest to visitors; and its results have already been repeatedly acknowledged by those most capable of appreciating such efforts.

The limited facilities of the present garden greatly retard the full development of this object. It is highly necessary to establish specimen orchards of the best fruits, in order to illustrate the best modes of culture, and arrive at a correct knowledge of the nomenclature of varieties of fruits. This want is now severely felt, and its fulfilment would be hailed with genuine delight by all who are fully alive to the growing importance of fruit culture.

The purposes of the garden, as a proper auxiliary to the department, will not be fully answered until a botanical collection and museum is established. It is a source of well-founded surprise by visitors to the capital of the nation, that no systematic attempt has been advanced, having in view the foundation of a museum of native vegetable products, or a general botanical garden of plants.

To accomplish more fully what I deem to be necessary for the full development of this branch of the department, it will be necessary to increase the glass conservatories and propagating houses, for which I have asked an additional appropriation.

I long perceived that the few acres of the propagating garden were quite too limited for the need of this department in its present organization, and that much more land would be required to carry out my ideas of what experimental ground should show. To do this effectually, and essentially for the benefit of the farmers of the country, there should be placed at the control of the department, land enough to test the various grains, grasses, and seeds of every kind that may be offered, to try their genuineness, their soundness, their value, and the adaptability of any foreign ones to our own use.

In the belief however, that this want will be but temporary, it is hoped that Congress will make a permanent appropriation for the use of this department, with sufficient means for its improvement."

New or Rare Plants.

COCCOLOBA PLATYCLADA — *Flat-branched Lobe-berry*. — *Nat. ord.*, Polygonaceæ. *Linn.*, Octandria Trigynia. This remarkable plant was discovered at Wanderer Bay, Solomon's Islands, "Herald." "Being throughout the year covered with innumerable blossoms, generally interspersed with bright red, and finally dark purple berries, we regard this plant as one of the most interesting acquisitions of our gardens. It is readily multiplied from cuttings." — *Bot. Mag.*, t. 5382.)

HIGGINIA GHEISBECHII — *Gheisbecht's Higginsia*. — *Nat. ord.*, Rubiaceæ. *Linn.*, Tetrandria Monogynia. Probably a native of New Grenada. Leaves, rich velvety green above, and reddish purple beneath. It is a handsome stove plant. — (*Ibid.*, t. 5383.)

PILEDRANASSA OBTUSA — *Blunt Phædranassa*. This was discovered above 10,000 feet above the surface of the sea, upon the Pichinca mountain, near Quito. It blooms during the winter, and has pretty scarlet flowers, tipped with greenish-yellow. Figured in the *Bot. Mag.*, t. 5361.

CYPRIPEDIUM HOOKERÆ — *Lady Hooker's Cypripedium*. — Discovered by Mr. Hugh Low, jr., in Borneo, and sent by him to the Clapton Nursery. It was figured in the *Bot. Mag.*, t. 5362, and appears to have dark green variegated leaves, with pale mottling. The flowers are marked with yellow and purple on a pale green ground.

FERN-LEAVED CHINESE PRIMROSE. — Raised by Messrs. E. G. Henderson & Son, Wellington Road Nursery. It is a crimson-flowered, and has the unusual property of coming true from seed. — *Floral Magazine*, pl. 149.

ILEX FORTUNI. — A new evergreen, is another invaluable addition to our collection of hardy shrubs; it is thickly set with small, glossy, dark green leaves, which shine like varnish, is of rapid growth, and stands clipping into any desired shape. It is, therefore, admirably adapted for hedges; those which are formed of it in Japan are, we are told, so close that one may walk on the top—and, of course, the sharp spines on the leaves render such a fence totally impenetrable to the boldest would-be intruder. Now that geometrical gardens are coming so much into fashion, the want of a good

hedge plant, more lively in appearance than the Yew, and more rapid in growth than the Box, is much felt, and this want, the new species is expected to supply. — *Cot. Gard.*

ABIES POLITA. — A very fine fir from Japan. It is described by Siebold as a superb sort of Spruce, found wild, according to his informants, in vast forests on the lofty mountains that extend to the north of Nippow, and also in the Kuriles.

PITCAIRNIA TABULÆFORMIS. — New Bromeliaceæ, exhibited by M. Linden, of Brussels. Native of Chiapas. Orange flowers on short stalks, on a level almost with the surrounding tuft of leaves, giving one the idea of a table, whence the name. — *Hort. belg.*

PHYLLOCACTUS CRENATUS, var. *Ros. grandifl.* — A variety obtained by crossing the *Ph. crenatus* with the *Ph. Ackermanni*, remarkable for its large pale pink flowers. — *Gartenflora*.

PANAX SESSILIFLORUM. — One of the arborescent Araliaceæ which those two travellers, Maack and Maximowicz, brought from the River Amoor. Perfectly hardy in central Europe. Small tree, no stings on the main stem, but a few sharp ones on the branches. Only specimens of this remarkable novelty to be found in the Botanical Gardens of St. Petersburg, and in Haage's establishment in Erfurt, Germany. — *Id.*

BERBERIDOPSIS CORALLINA. — From Valdavia, climbing shrub, evergreen, cylindrical branches. Simple leaves, short foot-stalk, oblong, lower end cordate, upper one pointed, serrated edge, under side dark green. Magnificent flowers, brilliant purple, hanging grape-like on large peduncles of same shade. Considered hardy by Sir W. Hooker. Has traits of both the Berberideæ and Lardizabaleæ, and thus forming almost the transition between the two. — *Rev. Hort.*

RITCHIEA POLYPETALA. — Very remarkable Caparidea, from Western Africa. Originally discovered by Barter, of the Niger Expedition. Alternate leaves, composed of from 3 to 5 leaflets each. The same number of flowers, large size, from a cluster which often measures a foot and more. — *Bot. Mag.*

CALANTHE VEITCHII HYBRIDA, (*Veitch's Calanthæ*). — This is a garden variety with pink flowers, obtained by Mr. Dominy at Messrs. Veitch & Son's.

Exeter Nursery, by fertilizing *Limnates rosea* with the pollen of "that variety of the white *Calanthe vestita*, which has a purple spot at the base of the lips."—*Id.* t. 5375.

CEANOTHUS CUNEATUS.—*Nuttall.*—(The Wedge-leaved Ceanothus.)—An evergreen shrub, growing from six to eight feet high, with somewhat thorny greyish shoots very closely interwoven. Leaves half an inch long, wedge-shape or somewhat oval, and not unfrequently with two serratures near their extremities, and furnished with numerous elevated, simple and oblique veins on the under side. Flowers white, in small axillary umbels.

It is found on the Sacramento Mountains in California, and on the dry gravelly islands and bars of the rivers in the Oregon country, flowering in May.—**GEORGE GORDON.**

LYCLOPTELIUM PUBIFLORUM (*downy-flowered.*) This plant was introduced by Messrs. Veitch & Son, through their collector, Mr. Richard Pearce, from near Chiloe; it is therefore probably hardy. The flowers are handsome purple, and remind one some what of the Foxglove.—*Bot. Magazine, t.* 5373.

STRIPED JAPANESE CHRYSANTHEMUM.—Introduced by Mr. Fortune, and exhibited by Mr. Standish, of Bagshot and Ascot Nurseries. Some of the florets are red, and some white, while others are striped longitudinally red and white.—*Floral Mag., pl.* 143.

THE BON GARDINER (good gardener), for 1863, a French annual, speaks of the following as remarkable amongst the best novelties of the past year:

Adelaster albiviridis—*Anthurium leuconeuron*—*Arnebia Griffithii*—*Clarkia pulchella, fl. pleno*—*Dianthus hybridus multifl.*—*Geranium platyptalum*—*Maranta ornata*—*Hebeclinium atrorubens*—*Mutisia decurrens*—*Nemophila atomaria oculata*—*Penstemon Lobbi*, new Californian plant, discovered by and named after Mr. Lobb—*Pyrethrum delicatissimum* and *P. erimium*—*Rynchoria albonitens*—Twenty-four new roses—Five new varieties of *Gladolus gandavensis*—Thirty-seven new *Chrysanthemums*—*Caladium Wightii*, *Perrieri*, *regale*, *macrophyllum*, *Lemaireanum*, *Hardii*, *splendidum*, *cupreum*, *Schoelleri* and *Schmitzii*—*Camellia Reine des Beauties*, or Queen of Beauties, and *C. reticulata fl. pleno*, introduced by Mr. Fortune from China—the Pansy *Faustus*, or King of the Blacks, the only flower, besides the Bean, said to have a

true black shade—*Salvia cacialifolia*—*Sedum pulchellum*—*Streptocarpus Saundersii*—a new *Zinnia* from Mexico—and the following Begonias, introducing to the world at large, the following hitherto obscure personages: Friedrich Liesmeyer, Charles Leireus, Victor Hemoine, Madame Celeste Winans, Edward Teel, Walter Butt, Baron Oustinnoff, Keramis, Estrella da Brezil, Re Fernando and Sambo, the latter a gentleman well-known in the United States; also *Begonia longipila*.

New and Rare Fruits.

ELLISDALE RASPBERRY.—This a new Raspberry, found by the writer, growing wild upon the Ellisdale farm in this county. The plant has the habit of the common Blackcap Raspberry, but is of more robust growth. Still, with the foliage off, it might be taken for that variety. It propagates from the ends of the canes in the same manner as the wild sort, through the fruit is more like the Antwerp. In size the fruit is medium to large, perhaps a trifle larger than Brinekle's Orange, with a flavor unsurpassed. It is, however, rather soft for a market berry, though it answers remarkably well for home consumption. The canes grow from five to eight feet in length usually, though I have them on very rich ground that now measure thirteen feet in length. The color of the canes is a light purple, spines small and not troublesome in picking the fruit. It is a very prolific bearer, producing more fruit, and of a better quality, in my grounds, than celebrated Doolittle Raspberry. The fruit is light purple with a whitish bloom. It is quite as productive, and the fruit is equally as good as any of the Antwerp class, and this has the advantage of being perfectly hardy.

Taken altogether, I consider this one of the most valuable varieties in cultivation, to grow this far north, as I have never known it to winter-kill in the least.—**H. A. TERRY, in Iowa Homestead.**

GRAHAM'S AUTUMN NELIS PEAR.—We have received from Mr. Graham some fruit of this delicious Pear, trees of which are now for sale by Mr. Standish, of Ascot and Bagshot. The fruit is rather larger than the Winter Nelis, and for richness of flavor is not surpassed by any pear of its season. The tree, which is as yet quite young, bore this year upwards of a bushel of fruit, which was so heavy that the branches required to be supported with stakes.

THE "COLVERT APPLE."—While at the Stephenson County Fair, our attention was attracted by a very fine, showy apple, among the collection of Mr. E. Ordway, of Freeport, which he called the Colvert. The apples are large size, nearly covered, when exposed to the sun, with stripes and splashes of crimson; a few russet dots are scattered over the surface; basin, russet, spread out on one side—calyx, closed in shallow basin; stem very short and thick; flesh greenish white, coarse grained, agreeably acid; core small, seeds close in cavities.

The above apple was brought into Stephenson Co., Ills., about 1850, by Wheeler & Brewster. Has been in bearing about six years. The apple is one of the best of its season for all uses. Ripe last of September and first of October.—*Prairie Fur.*

Domestic Intelligence.

FUNGI.—The number of germs, or other reproductive bodies, which parasitic fungi produce, is incalculable, almost infinite. It has been ascertained that one grain of the black matter which fills up the ear of corn in smut, contains upwards of four millions of spores or seed vessels, which are again filled with sporules or seeds so infinitesimally minute and impalpable, that no definite forms can be distinguished by the highest powers of the microscope. When a seed-vessel is ruptured, they are seen to escape in the form of an airy cloud, filmy as the most delicate gossamer; and on a fine summer day, a keen-sighted observer may behold them rising from diseased heads of growing grain into the air, by evaporation, like an ethereal smoke, dispersing in innumerable ways, by the attraction of the sun, by insects, by currents of wind, by electricity, or by adhesion. The atmosphere is freighted, to an inconceivable extent, with such germs, quick with life and ready to alight and spring up. So tenacious are they of vitality, that neither summer's heat nor winter's frost can destroy them; and when these are absent, they will not develop themselves or spread; otherwise the whole world would be speedily overrun with them; the fig-tree would not blossom, and there would be no fruit on the vine; the labor of the olive would fail, and the fields would yield no meat."—*Scientific American.*

NEW VARIETY OF POTATO.—It is related in a Belfast paper, that a new variety of potato has been raised in Ireland, from American seed, brought

by one of the blockade runners, and named "Confederates." In shape they greatly resemble the now almost unknown but once favorite "ash leaf kidneys," being a long oval with flat sides. The size is immense, many weighing a pound each, and the quality when cooked, is excellent.

THE MAY CHERRY, here called Early Richmond, is all the go, and every tree is set that can be obtained. We heard wonderful stories of the profits of this fruit; one man sold one hundred and twenty-six bushels from a young orchard of six hundred trees, four years set, at an average of over four dollars the bushel; that is over a hundred dollars an acre. Next year he thinks it will double the crop.—*Me. Fur.*

THE EXPERIMENTAL GARDEN, WASHINGTON.—When it is remembered, that but a short while ago, the site of this fine garden was only a worthless swamp—that, in point of fact, the garden is all "made ground," having been filled up with rubbish, and only topped with earth—the institution cannot fail to be regarded as a great success. The garden is now in better order than it has ever been, for Mr. Saunders' energetic and conscientious management is beginning to tell upon it. Many needless walks and merely ornamental beds have been dispensed with, and the room thus wasted has been turned to good account. Nevertheless, the garden is still rather ornamental than useful, at least to the degree which Mr. Commissioner Newton and Mr. Saunders desire it to be. It contains, however, an immense number of fine grape vines of countless varieties; large beds of strawberries, raised from seed of the very best kind, and a variety of other fruits, as well as experimental beds of cereals, potatoes, &c., with a remarkably healthy collection of greenhouse and other plants and shrubs.—*Wash. Chronicle.*

THE RIBSTONE PIPPIN APPLE IN IOWA.—I have found the tree hardy, and the fruit fully sustaining its high reputation in other countries, and well worthy of cultivation here; especially as the varieties recommended by A. J. Downing, as surpassing it, except the Swaar do not succeed here. He says: "The Ribstone Pippin, a Yorkshire apple, stands as high in Great Britain as the Bank of England, but must give place with us to the Newtown Pippin, the Swaar, the Spitzenberg, or the Baldwin, &c. The sample I gave you is below medium size."—WM. LONGWORTH, *Pleasant Hill Nurseries, Dubuque.*—*Iowa Homestead.*

OLD PEAR TREES.—Pear trees are standing in Detroit, planted by the French settlers over one hundred and fifty years ago, and they bear profusely without presenting any symptoms of decay.

DELAWARE PEACHES.—Mr. Reybold is the "Peach King" of Delaware. No less than 800 acres, of which 150 were planted last year, and 200 more will be added this fall, making *one thousand* acres in all, exclusively devoted to peach culture. The crop while maturing, two steamboats are constantly running to carry off. The net profits for the last three years are roughly estimated at \$300,000.

DOUBLE APPLES.—Four bushels of double apples—two on a stem—grew this season on a tree in Lenox, Mass.—*Daily Paper*.

CENTRAL PARK FOUNTAIN.—The Central Park Commissioners have adopted plans for a basin and fountain to occupy the space between the grand staircase at the end of the promenade, and the lake below. The basin will be round, and over 90 feet in diameter, constructed of massive stones, without ornamentation. The fountain will be of the familiar urn-shaped pattern, than which nothing more beautiful can be designed. The jet will rise to the height of about 25 feet, so that its crest will be visible from the level of the promenade. The fountain will play in the afternoon of every fair day in mild weather, and will be one of the most interesting objects in the park. It will be the only fountain of any size in operation in the city.

SEQUOIA GIGANTEA.—The editors of the *Scientific American* have received from California a piece of wood from a tree thirty feet in diameter, the annual rings, upon which indicate the age of the tree to be 6,300.

GREENHOUSES AND GROUNDS OF MR. HACKETT THE COMEDIAN.—Mr. Hackett, the Shaksperian comedian, has returned east from a long visit to his agricultural property on the Western prairies. During his absence Mr. Hackett has made the prairie blossom like the rose. He has set out a forest of trees, which have grown ten feet in two years. He has built a chateau of brick manufactured near by. He has laid out lawns, dug ponds, bridged rivers, and fenced in his section. He has erected a magnificent greenhouse, and a *chalet*, and a billiard house, and a bowling alley, and a barn, and several splendid stables, and various summer

arbors. Now he returns, bronzed with the sun and invigorated by toil, to again play Falstaff before our jocose President. This versatility of genius is most wonderful.—*Daily Paper*.

Obituary.

DEATH OF DONALD BEATON.—This distinguished British gardener, (formerly gardener to Sir W. Middleton,) whose fame, as a thoroughly practiced and scientific writer, is well known wherever English Horticultural literature has a place, recently died in his 63d year. He was one of the principal associate editors of the *London Cottage Gardener*, the most interesting of all our foreign exchanges.

DEATH OF DAVID HAGGERSTON.—This well-known ornamental gardener, (formerly in the employ of the late John P. Cushing, and more recently superintendent of Mt. Hope Cemetery,) which bears evidence of his ability, died on Friday, Nov. 6th, 1863. Mr. Haggerston was born in Macclesfield, England, 1802. After passing through a thorough education as a practical horticulturist, at the age of twenty-one he came to America, where his taste and experience were soon availed of by some of our opulent suburbans. He was employed to lay out grounds of Mt. Auburn Cemetery, of which he was the superintendent during the first year of its establishment. He subsequently took charge of the conservatory and grounds of John P. Cushing, Esq., in Watertown, where he remained for nearly twenty years, and then accepted the position of Superintendent of Mt. Hope Cemetery, which originated as a private enterprise about twelve years ago. In 1857 this cemetery was purchased by the City of Boston, and placed in charge of a Board of Trustees, whose confidence in his ability and qualifications has been annually expressed by unanimously electing him the superintendent until his decease.

Foreign Intelligence.

BEDDING PLANTS.—Arrange the propagation of these according to their habits. Those that require to make a free growth before they bloom to be got on first, and those that come into bloom quickly may be deferred. Petunias, Heliotropes, Geraniums, Ageratums, Neiremburgias, Lobelias, Cupheas and Lantanas, to be cut from as soon as

the old plants furnish shoots for the purpose. There need be no haste about Verbenas, Dahlias, Mimulus, Perillas, Oenotheras, Salvias and Tropæolums; they will make as good plants from cuttings.

TO DRY FLOWERS.—The easiest to begin with are yellow flowers, as they retain the color best. Spread them as flat as possible, and without altering their natural forms, on clean dry blotting-paper. Cover them with three or four thicknesses of the same, and apply a very slight weight to flatten them gradually without rupture of the vessels. After five or six hours, take other sheets of new blotting-paper and warm them at the fire, and while they are warm, change the flowers into them; apply more pressure than before. Let them remain till the next day, and change again in the same way, and you will have them perfectly dried and the color beautifully preserved. Blue are more difficult. Proceed in the same way, and at the first change cover the blotting-paper with two thicknesses of flannel, and apply a moderately hot iron to hasten the drying process. We have dried all sorts of flowers with a tenth part of the trouble, by merely placing them between blotting-paper in a book, and piling a few other books on it, but only those of thin texture and that do not abound in sap can be treated in so slight a way. In all cases, *dry quickly*; never crush the stems or cause the juices to exude, and avoid laying one leaf on another, which causes discoloration.

GOOD OLD ROSES.—The best Bourbons, for town culture, are as follows:

Appoline, very vigorous; Aurore du Guide, crimson; George Cuvier, rose; George Peabody, purple crimson, dwarf, but very free bloomer; Prince Albert, scarlet crimson; Pierre de St. Cyr, pale rose; Sir Joseph Paxton, rose, suitable for a wall. Experiment, would much extend the lists in this class.

China, Mrs. Bosanquet, pale flesh. Noisettes, Jean d'Arc, white; Jaune Desprez, sulphur, centre pink, very tender; Lamarque, lemon; La Biche, bluish white; Ophirie, salmon copper; Næresse, sometimes entered as a Tea, pale yellow, good.

The Teas, to be depended on, are few; perhaps only Devoniensis, tinted white, shot rose; and Saffrano, apricot in bud, but, when expanded, fawn; too loose. The following may be added as probable successes:

Homere, pale rose color; Bougere, rose color; Madame Willermoz, white, centre salmon.

COOL TREATMENT OF ORCHIDS.—Our catalogue of cool country plants is at present very meagre, simply because we have hitherto lost them as fast as they came, but we look confidently to the enterprise of our nurserymen, such as Messrs. Veitch and Messrs Low, to provide materials for a fresh start. Even under cool treatment Orchids require air, shade, and humidity, and will not succeed unless treated very differently from other greenhouse plants. A cool house ought always to face the north. *Ada aurantiaca*, *Brassia Gireoudiana*, *B. cinnamomea*, *Cypripedium Schlimii*, *Epidendrum sceptrum*, *E. vitellinum*, *E. verrucosum majus*, *Barkeria spectabilis* and *Skinneri*, *Cyconches barbatus* (*Paphinia barbata*), *Cattleya citrina*, *Comparettia falcata*, *Cyrtorchilum maculatum*, *Disa grandiflora*, *Eriopsis biloba* and *altissima*, *Cælogyne cristata*, *Lælia autumnalis* and *anceps*, *Lycaste Skinneri*, *Maxillaria venusta*, *Notylia bicolor*, *Masdevallia coccinea* and *tovariensis*, *Odontoglossum angustatum*, *O. aureo purpureum*, *O. lietoniense*, *O. cariniferum*, *O. Cervantesii*, *O. cordatum*, *O. crinitum*, *O. grande*, *O. læve*, *O. nebulosum*, *O. nævium majus*, *O. Pescatorei*, *O. Phalænopsis*, *O. pulchellum*, *O. pretiosum*, *O. Reichenheimii*, *O. Uro Skinneri*, *O. terrestre*, *O. stellatum*, *Oncidium ornithorhynchum*, *O. leucochilum*, *O. tigrinum*, *O. Skinneri*, *Paphina tigrina*, *Peccatorea* (*Huntleya*) *cerina*, *Sophronitis cernua*, *grandiflora* and *ptero-carpa*, *Uropedium Lindenii*, *Trichopilia picta* and *suavis*, *Warrea Lindeniana*. The above include nearly all the American Orchids, with which I am acquainted, that not only delight in a cool house, but are worth growing in any house at all. A few more might, however, be added, such as *Cypripedium insigne*, *Odontoglossum hestilabium*, etc., to which a cool house is not essential.—SERAPIAS, in *Gardener's Chronicle*.

Never pot a plant without giving one-fourth in height of crocks (broken pots) or other drainage to the other three of compost.—*Glenny*.

BEGONIA REX.—The best way for a beginner to manage Begonias, is to keep them in a shady greenhouse moderately well aired till October, then remove them to the warmest part of the greenhouse, let them go nearly dry, and keep them so till spring, and then place them in a pit or frame, in which propagating is going on, to give them a start, and at the same time let them have a little more water. The soil should consist of turfy peat, sandy loam, leaf-mould, and dung rotted to powder, equal parts; when growing they require plenty of water, but not

a drop should ever fall on the leaves. The easiest way to propagate, is to cut out some of the buds with a leaf to each from the collar of the plant, and plant these in silver-sand and place on a moist bottom heat. In a damp stove, a leaf laid on a damp place will make roots directly; in a greenhouse this may be done by using a bell-glass covered with a piece of canvass or sheet of paper, and keeping them moderately damp. When rooted, they soon form small plants, which of course require delicate handling, and warmth and moisture to bring them on.—*Lond. Cot. Gar.*

KEEPING GRAPES AFTER THEY ARE RIPE.—

"This is a matter where care and attention can do much. I have this season kept Lady Downe's Seedling Grapes hanging on the vine till May, in a house where we began cutting Black Hamburgs in August. This house is 110 feet long, 11 feet high, and 11 feet wide, and has been referred to already as having been planted in 1858. It is a common lean-to house, built to serve the double purpose of growing figs on the back wall, a vine up each rafter, and one half-way up the centre of each sash, the sashes being 5 feet wide. The ventilation is by an opening sash to the north, on the top of the wall, and the front sashes open outwards in the usual way by lever and rod. The cost of this house, including boiler and two rows of four-inch pipe along the front, was under £200, and at Christmas last, we had four-hundred bunches of Lady Downe's and West's St. Peter's Grapes hanging in it, representing a commercial value little short of its original cost.

"In order that grapes may keep well, it is necessary that they should be well ripened by the end of September, and not grown in a wet border; nor should the internal atmosphere of the house be kept loaded with moisture. What is required in grapes to keep well, is a firm fleshy berry, not one full water. The bunches should have the berries well thinned out, more so than in the case of grapes that are to be used shortly after they are ripe. Long tapering bunches keep better than broad-shouldered ones, as the berries in the centres of the latter are apt to damp off and destroy the bunch before it is observed. As soon as the grapes are thoroughly ripe, the night temperature should at once be lowered to 50°, till the leaves fall off or ripen, when they should be removed carefully by hand from the vines. After this date the fire heat should never exceed 45°, nor fall below 35° at night; and in damp foggy weather, I keep the house carefully shut up for nights and days at a time. To

give air during a damp foggy day, is to fill the house with the very evil you wish to avoid—damp air. The surface of the internal border is allowed to get perfectly dry, and to remain so all winter, care being taken that as little sweeping or raking take place as possible, for by this means dust is raised, which settles on the bunches. Half the roots are in the outside border, and has no covering at all.

"Towards the close of February, I cut about fifty bunches of Lady Downe's, detaching the branch on which the bunch grew as when pruning the vine. I then sharpened the ends of the branches, and run some four or five of them, with a bunch on each, into the side of a Mangold Wurzel laid on the shelf of the fruit room, allowing the bunches to hang over the side of the shelf. In this way the grapes keep perfectly fresh till April. I left some fifteen bunches on one vine for experimenting upon, two of which, are still hanging at this date, May 2. About the 15 of April, the sap began to rise in the vines, and some the berries that were a little shrivelled suddenly got plump, while others that have shown no signs of shrivelling burst their skins, and the sap of the vine that had forced itself into them, began to drip from them.

It was tinged with coloring matter out of the berry, and had the taste of the berry. To stop this bursting of the berries, I made an incision in the lateral on which the bunch hung, betwixt it and the parent stem of the vine, in two places, half through, at opposite sides of the lateral. This drew off the sap, and no more berries burst. The vines have now young growths on them 9 inches long, and are appropriating all the sap, and the bleeding has ceased from the incisions. In February, I had all the eyes picked out of the laterals, except the one at the base of each. These are showing fruit like others that were pruned in the usual way, except the three I bled; they are much weaker than the others. From this experiment it may be reasonably inferred, that it is not judicious to keep grapes hanging on the vines after the sap begins to rise. It, however, proves that it is possible to cut old grapes in May, and, considering that new can be cut in January, gives an overlap of four months in the supply of Grapes."—W. THOMPSON.

THE FRENCH HORTICULTURAL SOCIETY's last report makes mention of a basket of apples, containing the following "precious varieties:"

Cathead Greening, Golden Apple, Golden Russet, Federal Pearmain, New-York King, Beauty of the West, Carrol's striped, Priestly, Mere part-

ner little (? my little partner), Vermont Nonpareil, Lady's Finger, Baldwin or Red Cheek, Yankee Pearmain, Black July Flower, Brownite, King's Sweeting, Wood's Greening, Sweet and Sour, Grave's Pippin, and a new German apple, called Rhein Apfel,—“All foreign kinds, grown by different people in France, going to be moulded in wax, and to be examined in regard to their special merits.”

The same report instances the strawberry Vicomtesse Hericart de Thury, as a very abundant bearer, very good fruit, and daily getting better appreciated.

INTERMEDIATE STOCK.—The use of this, as also of Ten-week and other Stocks in the spring is well known. By a very simple process, the Intermediate can be had in flower in perfection during the whole winter, with spikes as fine and plants as large as when out of doors at midsummer. Their usefulness is indisputable as cut flowers for bouquets and house decoration. Even in the conservatory, they are very acceptable in the middle of winter.

They should be sown in February or March, starved into showing bloom, whether single or double, in April. The single have been discarded, when properly hardened plant them out in a medium good border, about a foot apart, to be eventually properly staked if necessary. As the flower shows during the whole summer, cut it off. The plant becomes more bushy if those flowering shoots are cut home. In October the plants should be taken up, carefully potted, and placed under a north wall, where they must remain until they recover from the check received, when they can be taken into the greenhouse. I find the Scarlet Intermediate does best.—*Cot. Gardener.*

ANNUALS WITH ORNAMENTAL FOLIAGE.—*Atriplex hortensis rubra*, *Amaranthus melancholicus ruber* (rich red), *Ricinus communis* (H. H.), Brazilian and Crimson-topped Beet, Cannas, various, (may be planted out and kept over winter, if taken up before frost,) *Chenopodium atriplicifolium* (purple,) Milk-thistle, *Perilla nankinensis* (purple) Venus's Navelwort, common garden Beet.—*Id.*

AZALEAS DONE BLOOMING.—First take off the dead blooms and seed pods, and clear away the remains of the flowers that cling about among the stems. Then give them a good syringing, and put them in a warm close place; syringe frequently till they have made new growth. Then give air by degrees, and at the end of a fortnight, put them under a north wall or fence till autumn, and before

frost comes get them into the house, and give water only moderately. They should be just kept from frost, and in no way coddled, but may have extra warmth and moisture when about to flower. A light airy house with south or south-east aspect, with a ridge and furrowed roof, and means for breaking the sun's rays, morning and afternoon, is the best for roses. The grand thing is to ensure plenty of light, and means for the freest ventilation; with these requisites any kind of house will suit. The mean temperature from December to January, should be 45°, and about February to rise from five to ten degrees for early blooms.—*Gard. Weekly.*

FRAGRANT ANNUALS.—*Abronia umbellata*, *Agrotatum Mexicanum*, *Amblyolepis setigera*, *Cerithe auriculata*, *Cedronella Mexicana*, *Datura Wrightii*, *Dianthus Garnerianus*, *Hibiscus Africanus*, *Limnanthes Douglasii*, *Lindheimeria texana*, *Lupinus luteus* and most others, *Martynia fragrans*, Marvel of Peru, Mignonette, *Nemesis floribunda*, *Nicotiana longiflora*, *Nycterina capensis*, (*Oenothera acaulis*, *Perilla ocyroides*, *Petunia nyctaginaflora*, *Schizopetalon Walkerii*, Scabious, Stock, Sweet Pea, Sultan, *Tagetes lucida*.

MAPLE SUGAR.—Although a sufficient quantity of maple sugar has never been manufactured in this country, to rank it among our articles of exportation, it has for many years past, been about the only sugar used by a large number of people—especially those who live in the more thickly-wooded districts of the States, and those inhabiting the northern and western frontiers of the United States and Canada.

From the very nature of the business, the making of maple sugar is commonly carried in an encampment, and now I purpose to describe the various kinds with which I am acquainted; beginning, as a matter of course, with an Indian camp. I am speaking of the remote past, and of an encampment of Ottawa Indians, in one of the maple forests skirting the western shore of Green Bay. It is the month of April, and the hunting season is at an end. Albeit, the ground is covered with snow, the noonday sun has become quite powerful, and the annual offering has been made to the Great Spirit, by the medicine men, of the first product of one of the earliest trees in the district. This being the preparatory signal for extensive business, the women of the encampment proceed to make a large number of wooden troughs to receive the liquid treasure, and, after these are finished, the various trees in the neighborhood are

tapped, and the juice begins to run. In the mean time, the men of the party have built the necessary fires, and suspended over them their earthen, brass or iron kettles. The sap is now flowing in copious streams, and from one end of the camp to the other, is at once presented an animated and romantic scene, which continues without interruption, day and night, until the end of the sugar season. The principal employment to which the men devote themselves, is that of lounging about the encampment, shooting at marks, and playing the moccasin game; while the main part of the labor is performed by the women, who not only attend to the kettles, but employ all their leisure time in making the beautiful birchen moccasins, for the preservation and transportation of the sugar when made; the sap being brought from the troughs to the kettles by the boys and girls.

Horticultural Notices.

INDIANA POMOLOGICAL SOCIETY.

The third Annual Meeting will convene at Indianapolis, on Tuesday, January 5th, 1864, and continue in session four days. A general invitation is extended to all persons who are in any way interested in fruit culture. It is hoped that all who can possibly do so, will bring with them samples of fruits and wines. An interesting meeting may be expected. Several of the principal horticulturists in the Southwest will deliver essays on the occasion.

GEO. M. BEELER, *Sec'y.*, I. D. G. NELSON, *Pres.*

PENNSYLVANIA HORT. SOCIETY.

MONTHLY DISPLAY, NOV. 10TH.

The principal feature of interest this evening, was the great improvement exhibited in the tasteful arrangement of Bouquets and Baskets of Flowers; so much so, indeed, as to call for especial remark from the committee. The basket of cut flowers exhibited by Mr. Joyce, gardener to ex-President Baldwin, was certainly one of the best ever placed in competition before the society. This had the first premium.

Best Table Design to F. O'Keefe, gardener to Mr. Jos. Harrison.

Best Vase Plants, to same.

Best pair of Hand Bouquets, to E. Satterthwait.

A Special Premium of \$2, was awarded to H. A. Dreer, for a fine collection of Chrysanthemums. \$2 to Donald McQueen, gardener to Joshua Long-

streth, for extra fine plants of *Cereus Jenkinsonii*, one of the old, but most desirable of the flowering Cactuses; and \$3 to W. Joyce, gardener to ex-President Baldwin, for two pots of the beautiful Hot-house plant, *Sonerilla margaritacea*.

The Fruit Committee awarded the premium for Foreign Grapes, to W. Joyce, gardener to M. W. Baldwin. They were White Nice,—excellent specimens of this good late-keeping kind. Pears—12 varieties, 3 each, to E. Satterthwait. The list comprised Vicar of Winkfield, Lawrence, Duchess, Easter Beurré, Josephine de Malines, Doyenne d'Alençon, Taylor, Petre, Beurré d'Anjou, Oswego Beurré, Colmar des Invalides, Chaptal.

They awarded a premium of \$1 to T. Garrigues, for a plate of Jones' Seedling Pears; but we suppose this is not the Jones Pear, a New Jersey seedling described by Dr. Brinckle in past transactions of the Pennsylvania Horticultural Society. As it was worth a special premium in the estimation of the society, it should be worth describing by a more distinctive name.

The Vegetable Committee awarded the first premiums for Celery: Brussell's Sprouts; and a specimen of \$1 for Spinage, to Thos. Meghran, gardener to Girard College; and a special premium of \$1 to Mr. J. McGowen, for superior Carrots.

THE BROOKLYN HORT. SOCIETY,

The following named gentlemen were elected to the respective offices, to serve for the term of twelve months:

President—J. W. Degrauw.

Vice-Presidents—W. A. Anthony, D. P. Barnard, R. W. Ropes, Henry Baxter.

Treasurer—J. W. Degrauw.

Cor. Secretary—A. S. Fuller.

Rec. Secretary—G. H. Vanwagenen.

Librarian—S. B. Brophy.

Executive Committee—C. B. Nichols, G. Hamlin, Prof. Eaton.

Finance Committee—Walter Park, D. P. Barnard, R. W. Ropes.

Library Committee—L. A. Roberts, A. S. Fuller, C. H. Vanwagenen.

Premium Committee—B. C. Townsend, C. Gaingee.

Fruit Committee—J. Dalledouse, J. Weir, N. Copley.

Plant Committee—Wm. Davison, G. Hamlin, E. S. Scott.

Vegetable Committee—A. Chamberlain, J. Cavanagh.

THE GARDENER'S MONTHLY.

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THOMAS MEEHAN, EDITOR.
W. G. P. BRINCKLOE, PUBLISHER.

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VOL. VI.—NO. 2.

Hints for February.



FLOWER-GARDEN AND PLEASURE-GROUND.

Now that the physical season of the gardener's year is replacing the mental, all winter work should be speedily got through with. Pruning especially must be finished up. Some kinds of flowering shrubs, as Altheas, Coluteas, Hypericums, and others that flower from the new growth, should be severely pruned. Others, as the Lilae, Pyrus japonica, and such that flower from wood ripened last year, should merely have their weak growth thinned out in pruning.

In preparing to plant small places, arrange to employ plenty of shrubbery; nothing gives them so great an air of completeness and finish as these. Our remarks last month are still applicable.

VEGETABLE GARDEN.

There is nothing so acceptable as early vegetables, and one of the most useful aids to this is a hotbed. Every amateur should have one, as every well regulated horticultural establishment regards it as one of its most essential features. Not only is heat generated by manure more favorable to vegetation than that from any other kind of, heat usually applied, but the manure itself, after being so employed, seems better than that preserved any other way. We would sooner have one load of hotbed manure for horticultural purposes, especially for pot plants generally, than two of the same kind of manure that had not been so employed.

A south-eastern aspect is best for a hot-bed, and it should be well sheltered from winds on the cold quarter.

The foundation for the hotbed should be about eighteen inches wider than the frame to be set on it when finished, and the manure regularly laid on till about the height of three feet has been obtained, when the frame may be set on. It is not well to tramp the manure too heavily, or the heat will be too violent. Sometimes the manure is very 'strawy,' in which case it should be watered with drainage from the manure heap, or the heat will be 'a good time coming,' when it would be very inconvenient to 'wait a little longer.'

If the ground is dry, the soil may be dug out about a foot in depth; but for very early forcing it is best to have the whole above ground, as when sunk, the cold rains or thawing snow collects in the pit and cools the materials.

The sashes for hotbeds are usually six feet long, and about three feet wide, costing from \$2 to \$2 50 when glazed and finished. The frame should be about 2½ feet high at back, and 1 in front—steeper at the back, if any thing.

To make a hotbed, long stable manure should be employed, and if it can be turned a couple of times, before heating violently each time, before permanently using, the more regular will be the heat in the bed, and the longer it will last.

When the manure and frame are both fixed, a half inch of soil should be thrown over the manure under the sash to absorb the gross gases that would else be too strong. For a few days after, the heat will be too violent, but when the thermometer indicates a temperature of 90°, operations may begin; but the usual aim is 70°. When the bed shows signs of getting below this, linings of stable manure must be applied round the frames, one and a half feet thick, and if boards, shutters, mats, or any similar material can be spread over these linings, the heat will be maintained much longer.

Having secured the hotbed, Dahlias, Annuals, Cucumbers, Tomatoes, Peppers, Egg-plants, and many other interesting things, can be started, by which we may get several weeks ahead of our neighbors in the enjoyment of vegetable luxuries,

and when done with the bed in May, it will be the very place for Gloxinias, Achimenes, and many other beautiful house plants which delight in a warm moist heat.

FRUIT GARDEN.

Pruning of fruit trees, when required, should be proceeded with at favorable opportunities. We write *when required*, for in our climate, more injury is done by the knife than by the neglect to use it. Gooseberries, for instance, are usually ruined by pruning. In Europe, it is customary to thin out the centre well to 'let in the sun and air.' Here it is the sun and air that ruin them, by inviting mildew; and so the more shoots, the better. Our country farmers are the best gooseberry-growers, where weeds run riot, and grass and gooseberries affect a close companionship. Wherever, in fact, the gooseberry can find a cool corner, well shaded from the sun, and with a soil, which, never wet, nor yet by any means dry, there will gooseberries be produced unto you. The English kinds mildew so universally, as to be almost gone out of cultivation south of the St. Lawrence. Nor, indeed, is it to be so much regretted, since the improved seedlings of large size and fine quality, raised from the hardier American species, are becoming known, and their merits appreciated by growers.

Manuring of grapes should be regulated by the nature of the soil. If it be damp—in most cases a bad condition for grape-growing—stable manure in great quantities means diseased vines. In dry ground it has a beneficial effect. Many persons of small places have grapes in damp ground, or can have none. They must take care to keep the roots near the surface; never crop the ground about them to destroy the small fibres, if it can be avoided; and even good may often follow, when the vines seem failing, to carefully follow up the roots, lift near the surface, and encourage, as much as possible, those remaining there. Wood-ashes, bone-dust, and such like fertilizers are best for grape-vines in low ground.

The rule, in pruning grape-vines, is to shorten the shoots in proportion to their strength; but, if the advice we have given in former summer hints has been attended to, there will be little disproportion in this matter, as summer pinching of the strong shoots has equalized the strength of the vine. Those who are following any particular system will, of course, prune according to the rules comprising such system. As a general rule, we can only say, excellent grapes can be had by any system of pruning; for the only object of pruning

in any case, is to get strong shoots to push where they may be desired, or to increase, with the increased vigor of the shoot, which pruning supposes will follow the act, increased size in the fruit it bears.

PLANTS AND PLANT HOUSES.

Neat, well formed specimens of plants are now held as desirable as well-flowered plants. To get these, as the strong shoots grow, pinch them back with the finger and thumb, not touching the weaker ones unless it is desirable to make them branch to fill out an open space. Where the shoots grow thick together, tie out by light stakes to let the air and light in equally to all parts of the plant. Where the wood is hard, and a shoot is wanted to break out, a notch cut in above the place desired, will generally accomplish the object—not too deeply, or the part above will suffer as if the branch had been ringed. If Fuchsias are wanted to bloom early, cut back a few now that flowered last year, repot, and grow in a heat of about 45°, and they will bloom in March. As a rule, with most plants it is best to let a plant push half an inch or so of its new growth before repotting, as the roots do not move until some new growth is made; and they do best when the roots push at once into newly potted soil. Soil constantly watered, without healthy roots growing through it, soon becomes 'sour.' Ventilate whenever the external temperature is above 45°, unless cold winds are blowing, which will soon make your leaves look brown.

We have spoken of the advantages of manure water to plants when growing freely. This is dangerous advice in inexperienced hands, as it may be made too strong, and injury to the plants result.

For general purposes, a garden-shovel full of rotten hotbed manure, put in a barrel of water, and suffered to remain till it becomes clear for using. Liquid manures made from guano, and other concentrated fertilizers, should be employed only by skillful hands. Narcissus, Hyacinths, and other bulbs, that have been in pots and glasses, kept cool and dark as they should be, may some of them be brought forward gradually to light and heat, and a few every week for a succession of bloom. Mildew frequently makes its appearance in green-houses at this season. Flour of Sulphur in water syringed through the plants, is the best cure. The best preventive is to look well to the general health of the plant. Any derangement is likely to produce disease.

Communications.

THE NEW ROSES OF 1862.

BY JOHN SAUL, WASHINGTON CITY, D. C.

It has been said by the first Rose-growers in England, that the New Roses of 1862 were the best which had been sent out in any one season for a long time; and my experience with them in our climate confirms me in the same opinion. From the number of Hybrid Perpetuals annually sent out, it would appear that more attention is given to this class, both in France and England; and with us it is equally valuable. With the Editor's permission, I will give a short description of such varieties as bloomed with me the past summer. I will take them alphabetically:

HYBRID PERPETUALS.

Alphonse Damaizin is a very rich deep crimson, very dark and velvety; a good grower and free bloomer.

Beauty of Waltham, was raised by W. Paul from 'Jules Margottin,' and like that old favorite is really superb; color beautiful light crimson, very large and double, and exceedingly vigorous.

Comtesse de Segnier, crimson shaded with purple, large and double; growth moderate, a profuse bloomer.

Emile Dulac, deep rosy red, cupped very large and double, of perfect form; growth very vigorous, a free bloomer, a really magnificent new rose.

General Washington, is a very vigorous grower and free bloomer; at the date I write, (beginning of December) my plants are full of buds, and half opened flowers, striving against the inclemency of the season to expand; color brilliant rosy crimson, very large and double, first rate.

Gloire de Chatillon, a brilliant crimson, very large and double; good grower and free bloomer.

Henrietta Dubus, violet purple shaded, beautifully imbricated; a fine new flower.

Joha Hopper, a rose of English origin, sent out as one of the very finest flowers, which it fully maintains with me; color rose, with rosy crimson centre, exquisitely formed flowers and fine grower.

Madame Boutin, is very distinct; a bright cherry color, very large and of the finest form; a vigorous grower and free bloomer, a superb rose.

Madame Charles Wood, vivid crimson, beautifully shaded with purple; flowers of immense size and fine form, a splendid rose.

Madame Clemence Joigneux, has flowers of a deep rose, shaded with lilac, very large and double; a vigorous grower, superb rose.

Madame Ernest Drole, is a deep rose, most beautifully shaded, large and double; a vigorous grower and free bloomer, very fine.

Madame Furtado. This fine rose must be grown upon Manetti, as it is not sufficiently vigorous for its own roots; color a bright rose; large globular and very double; during the past fall this fine variety has given abundance of the finest flowers; deliciously sweet.

Madame Julie Duran, has flowers of crimson scarlet, shaded with purple, very large and of fine form; a vigorous grower and free bloomer; one of the finest new roses.

Maurice Bernardin, I consider the finest rose of 1862; color brilliant vermilion; large and double, vigorous in growth, in every respect first rate.

Marcel Vaillant, has been called, and very justly, the perpetual 'Paul Ricaut,' as it bears a great resemblance to that fine old Summer rose; bright scarlet, very large and double; one of the gems of the season.

Monte Christo, is a rose of the greatest beauty; blackish purple, painted or flushed with scarlet; one of the most beautiful. It was equally fine with me during the hot weather of July and August, as in the pleasant season of autumn. At the present time (beginning of December) my plants are full of buds and half blown flowers. A vigorous grower, in every respect first rate.

Olivier Delhomme, color a brilliant scarlet, large and double; a vigorous grower, superb.

Professor Koch, may be called a crimson 'Coup de Hebe,' flowering in the autumn; color rich deep crimson, vigorous grower; a very magnificent rose.

Robert Fortune, deep rose, beautifully veined and shaded, very finely shaped; a superb rose.

Souvenir du Comte Cavour, a seedling from 'General Jacqueminot,' crimson and black shaded, large and double; vigorous grower and free bloomer; very fine and distinct.

Turquoise, bright scarlet, large and of fine form, exceedingly vigorous; a splendid rose.

Vulcan, flowers purplish violet, shaded with black, very dark and distinct, growth vigorous, free bloomer, very fine.

TEA ROSES.

Gloire de Bordeaux, is a seedling from 'Gloire de Dijon,' and like its parent exceedingly vigorous and a free bloomer; color silvery white, the inner side of the petals bright pink; a distinct and most desirable variety.

I have many other roses of the same year, some of which will doubtless fully equal the above, but I

must test them fully before recommending,—at present I could only give the description of other growers.

Among roses a little older, I would recommend 'Victor Verdier.' It is a flower which should find its way into every garden where roses are grown; color rose shaded with carmine; flowers of immense size, finely shaped, petals of great substance; one of the finest of roses in the fall; vigorous grower and profuse bloomer.

FURNACES INSIDE GREENHOUSES.

BY A. L. PENNOCK, JR., UPPER DARBY, PA.

In looking over the *Monthly* for the present year, I noticed an article advocating outside furnaces, upon the ground that the house is chilled by the cold air drawn through the crevices to supply the place of that consumed by the fire.

The plan upon which my furnaces are built appears to obviate that difficulty. They are placed within the houses beneath a board floor, with a trap door, which, when open, allows the heat to ascend, and when closed, prevents smoke, gas or dust from escaping into the house. A conductor, terminating near the lower furnace door, supplies the fire with air from outside, the quantity being regulated by a damper.

If building again, I would bring the conductor into the furnace below the fire-bars, and only use the lower door to rake the fire, or to take out ashes. An opening, closed when not required, in the outside wall above the furnace, allows smoke or gas to pass off. The brick work of the furnace is separated from the Greenhouse walls by the space of a few inches, so that but little heat is absorbed by them.

If the above plan is not the best, it may elicit better ideas from others.

[We shall be very glad to have the experience of our correspondents on the best arrangement of greenhouse furnaces. Besides inside and outside questions, depth is worth attention. Now that it is generally thought best to have the flues as high from the ground as possible, there seems no use for such deep stokeholes, with all their inconveniences, as once were fashionable.—Ed.]

NOTES ON GRAPES.

BY A. HUIDEKOPER, MEADVILLE, PA.

IN VINERY.

Red Traminer—Grew this alongside of the Delaware, to compare: found them quite distinct.

Traminer is larger and of a duller red color, and lacks the pink tint of the Delaware. The latter did not ripen quite so early as it did last year, and the foliage was not so perfect: probably I let it overbear, which is its tendency.

Grosse Coulard—This vine Mr. Prince sent to me as a substitute for the Buckland Sweetwater. It proved the same as Child's Superb, which I already had. The clusters of this grape are chubby, and not symmetrical at first, though it improves somewhat in form as it develops its growth. It ripens early, and hangs well, but I consider it but second rate.

Golden Hamburgh—Large in berry and cluster, and very sweet, but does not improve by hanging, acquiring an *over ripe* taste; strong grower.

Bowood Muscat—Strong grower; fruit large, fine, and among the best to keep; the color this year passed from a yellow to quite a shade of brown.

Canadian Chief—Berries small, and very sweet at maturity; has, I think, on the whole, been underestimated. It is the Delaware of the Chas-selas varieties, if left long enough on the vines.

Black Hamburgh—I laid a number of well-ripened bunches of this grape on paper in a cool room, this season, and they kept in good condition until the middle of the present month (December). The extreme thinness and tenderness of the skin make them preferable to sick persons over other kinds.

I may add, that I used no fire heat whatever in the vinery this year, and ventilated freely: one of the gable ventilators being kept open day and night as soon as the frosts were over. The fruit ripened in good season, and very thoroughly, no red grapes by any mislocation showing themselves upon vines which should produce black ones.

I was somewhat annoyed by the thrip, which seems to live through summer and winter, despite fumigation, &c.

OUT-DOOR GRAPES.

Diana—This fruit, generally very uneven in its ripening, was doing better with me this season than usual, but was caught by a frost before maturity.

Northern Muscadine—Ripened early, and fell off at once.

Burton's Early—Did the same. I consider neither worth cultivating.

A friend this fall remarked, after eating Delawares, he did not care to have any other out-door kinds. I half subscribe to his opinion. I gave persons Concord and Hartford Prolifics, this fall, and most of them preferred the latter.

I made some wine out of a variety I suppose to

be the Early York, (lately disseminated as Franklin) and shall report next year when time has tested the experiment.

APPLE-PIE MELON.

BY SWIFT.

This useful fruit is not so generally cultivated as it ought to be, owing to the fact, probably, that it costs too much, when grown, to make it palatable. The following receipt, for which I am indebted to my wife, is preferable to my taste, and certainly costs less than spiced citron:

To ten pounds Apple Pie Melon, (pared, seeds and pulp taken out,) and cut in pieces about one inch square; add three pounds of sugar; one pint of vinegar; a few pieces of stick cinnamon, and a few cloves. Boil the whole together for an hour and a half, and when it cools, it is fit for immediate use; or, it will keep till apple pie melon time again, by being put in jars, and covering them with a double thickness of paper, providing you don't make too free with it.

WESTERN MARYLAND.

BY YARDLEY TAYLOR.

Some months ago, a correspondent in the *Monthly*, from Rochester, if I remember right, asked for information as to soil, rocks, and situation in regard to fruit culture, in Western Maryland, particularly the vicinity of Baltimore and Frederick City. Two communications in reply appeared, but neither of them seemed to answer fully the inquiries.

The soil west from Baltimore, with few exceptions, is formed from the rocks in place, hence, when we know the rocks, we can understand the nature of the soil. First, there is granite and gneiss, for some twenty miles or more, with a tolerably good soil; then a bed of limestone; then magnesian rock such as steatite or soap stone; then micaceous rock, to the summit of Pan's ridge, at Mt. Airy, on the railroad, at an elevation of 800 feet above tide. Here the soil is light, glittering with scales of mica, and mostly chestnut timber. West from here, various slates occur, with sometimes whitish colored sandy slates, and in one place roofing slates are quarried to considerable extent. As we approach the Monocacy river, limestone is sometimes met with; when, after crossing that stream, it is the principal rock. Then we descend to about 250 or 300 feet above tide. Frederick City stands in this valley, based on primordial limestone; but the western part of this valley is covered up with secondary formation, such as red shale and conglomerate limestone or Potomac marble, as it is called.

A few miles west from Frederick, the single range of the Catoctin mountain comes in. This is composed of chlorate slate and epidote rock; and west, in the Middletown valley, there are many varieties of rock, making an excellent soil. Still further west, the white compact sandstones of the Blue Ridge occur; and still further west, the great limestone valley crosses the State from Pennsylvania into Virginia.

On this line, where the magnesian and micaceous slates predominate, the soil is light, and is not so good for fruit growing; however, in some places peaches succeed, but the limestone soils, or those containing a portion of that mineral, are the best for apples. Where chlorate slate and epidote rock abound, apple-trees grow well,—as well as in the Middletown valley.

But little attention has hitherto been paid to fruit-growing; but of late some individuals are turning their attention to it. David Richardson, near Buckeyetown, on the railroad, some six miles from Frederick, has planted largely, and in a few years will probably realize handsomely.

I see no reason why fruit-growing may not become a very much larger business than heretofore. There are, however some drawbacks. We are here situated within the influence of southerly winds from off the Gulf stream, that bring forward vegetation early in the spring, and then the westerly gales sometimes brings us a low temperature, that blasts the prospect of fruit. Elevated situations sometimes would be protection; but these cannot always be had. Limestone soil generally is in valleys, while other soils are more elevated.

There are other considerations that should claim the attention of one desirous of going into fruit culture here, and that is the varieties for market, whether for early or late use. What is valued in Western New York as good keeping fruit, is fall fruit when grown here; and for late fruit, we had better look south for keeping varieties. A few years ago, when the Federal troops were stationed at Harper's Ferry, we took several varieties of apples there for sale, in the fall, the last week in the tenth month, (Oct.) such as the Northern Spy, Domine and others, that at the north, are considered good winter fruit, when here they were fully ripe. We showed some of the Northern Spy to some officers, from Western New York, who knew them, and said they were just such as they have there in the middle of winter. We have been for several years engaged in testing fruits, from both north and south; but those from the south have not had time to be tested fully, many of them not yet in bearing.

The writer asks about the Albemarle Pippins of Virginia. That is the Newtown Pippin of the north; it was no doubt introduced there and the name lost or forgotten. I saw it on exhibition at the Virginia State Fair, some years ago, and knew it at once, having been acquainted with it more than fifty years. I see no reason why the elevated limestone valleys of Virginia might not yield the Newtown Pippin in as great perfection as any place on the Hudson river. All that is needed in going south, is elevation to equalize temperature. The same might be said of Pennsylvania. In Maryland the valleys are hardly elevated enough, yet some of them, towards the Alleghany mountains, might answer.

NOTES ON FERNS.

BY J. M.

This is the season, of all others, that Ferns and Lycopodiums are most appreciated by lovers of plants, owing to the general scarcity of plants in flower at this time of year, while the Fern may be said to be always at perfection, when well grown, owing to its flowers being inconspicuous. A few remarks on them will, I hope, be found sufficiently interesting to gain admittance to the pages of the *Monthly*.

The great demand for Ferns and Mosses, for Hanging-basket purposes, has brought them prominently forward of late, so that they are now to be found in almost all greenhouses. There are a great many small-growing Ferns admirable adapted for this purpose: among them *Asplenium Mexicana*, *Adiantum euneatum*, *A. setulosum*, *Blechnum quinatum*, *Platyloma rotundifolia*, *Pteris geraniifolia*, and numerous others, offer a fine quantity to choose from. Among larger growing kinds, the *Phlebodium aureum*, *Nephrolepis tuberosus*, *Nephrodium molle*, *Pteris tricolor*, *P. longifolia*, *P. serrulata* and *P. Cretica* albo lineata, are most commonly used. The *Nephrolepis* is unequalled for its effect, when placed in the centre of a basket with small *Begonias* around it, intermixed with *Lycopodium denticulatum*, which is the best one of any I have seen, on account of its rapid spreading habit. Others approaching near this in merit, are delicatissima, *serpensi*, *cæsius*, and *densa*; of more upright growing ones, the best probably are *cordifolia*, *stolonifera*, *umbrosa*, *Mertensii*, *Wildenovii* and *cæsius arborea*.

Ferns do well in a soil of sandy peat, or wood-ashes and turfy loam will do as well, if not better, with a sprinkling of coarse sand mixed with it.

They are mostly raised from seed, which sown in a bed of rather fine charcoal, will, if it succeed as well as a bed I raised in this way, give entire satisfaction. After the seed is sown, it should be covered with glass until the seedlings are a few inches high.

Ferns, as a rule, should be kept in a moist hot-house, with the glass shaded in summer. The thrip is very troublesome on some species, and will cause the plant to look brown if not soon destroyed. A good plan for their riddance is to immerse the foliage in water heated to 135°; this will destroy both thrip and the green fly.

Our native Ferns should not be overlooked in a collection, as there are some quite as pretty as any of the Foreign cultivated kinds. Of those to be got near Philadelphia, the *Asplenium pinnatifidum*, *A. Felix femina*, *Adiantum pedatum*, *Asplenium trichomanes*; the *Osmundas*, *Polypodiums*, and *Onoclea*, are all worthy of cultivating, and can be given the coolest part of the house.

ON THE LIMA BEAN.

BY "DAUPHIN CO.," PA.

I am pleased to see, by your attention to vegetables, in the "monthly hints," and by occasional articles from correspondents, that you do not place us poor "cabbage gardeners" out of the pale of horticulture. I like flowers and love fruits; but yet confess a partiality for the vegetable garden. Flowers have an interest. Some smell sweet, and most are pretty; but that is all you can make of them. Fruits are also well enough in their way. They look pretty too,—have a sort of an aroma, and are nice to take when one is somewhat thirsty, and no better stuff about. Moreover, they have been recently brought into notice for their medicinal qualities, and some philanthropists are urging them as daily articles of medicine for children; and their splendid hygienic powers. They are also recommended to adults to be taken as often as three times a day.

Now there is something substantial in a vegetable,—at least as my wife cooks them. We have an abundance every day, and the fragrance that flows from them as they steam on the round table, might tempt the rigid muscles of an anchorite. I have heard some men say, they cared nothing for vegetables. Poor fellows! Some men are born for the lunatic asylums; and others are not exactly *compos mentis*, who are not in there. If it is possible to love a bastile as ones life, it would not weigh against *my* love of freedom and the open air.

But about the Lima Bean—the chief of all my favorites. Did you, friend Editor, ever know any one to get Lima Beans earlier by trying any precocious plan whatever? I never did. I have sown them under glass, and dibbled them out—sown them on pieces of sod and set them out—grown them awhile in pots, till they almost flowered, and then put them out; but the ones sown at the right time, beat them all. The great thing with the Lima Bean, is the right time, for the least cold or dampness, while they are germinating, will rot them. But the 'right time' may be much accelerated by a large hill of sand on which to sow your Lima Beans—rich sand—a soil that will not only keep your bean warm and dry, but give it something to eat, worth eating, besides. There is no use trying for early beans, without large hills of light soil; with them you are all right.

Of course the holes should be filled with the poles before the hills are made; but, about these poles, they are often much too long. A bean will bear earlier on a short pole than a long one. The reason why, I cannot tell, but it is the logic of events. Again, the sooner you can train a shoot from one plant away across to the pole of the other, the sooner it will bear. I know this to be a fact also, because I have done it, and doing a thing as well as the old phrase has it, is be lieving.

Then about the posts, a fact may be repeated, that I am indebted to the *Monthly* for—char the ends of the poles before using. My poles do not cost me much—nothing but the cuttings from my 'scrubbery' as my girls call it, when I poke fun at their 'shrubbery.' But who wants to be cutting poles every year. I have had your charred poles four years, and they are good as new now.

And one thing more I could say to the would-be Bean grower. Do not set your seed too deep; an eighth of an inch beneath the surface is enough. Sow early, and watch closely. If so soon that some untimely cold rain nips them in the bud, sow again—'tis but a few Beans, and a few hours more work to be set off against perhaps some weeks enjoyment of the luxury.

Perhaps something may be added about saving seed. Our Tychmen, who sell all they can and eat the balance, carry out the same beloved system even to seed saving. They seldom save a pod on the pole that they can transform into gelt; and when the day has come for sharp white frosts, and a few laggards that have not come up to the market time, get nipped with the rime, these are left to ripen as best they may, and are carefully preserved

along side the gelt bag, but in another stocking, to raise the crop for the ensuing year. Such Beans rot very easily in the ground. One half the Beans to be had in the market are frost-ripened refuses of marketable crops; and though cold weather in spring rots many beans, the majority go into the rotting business on their own account, and from this very cause.

Leave one pole untouched for your seed crop; and, when you can spare time to do so, select the earliest, largest, and best ripened for the next year, and it will well repay for the extra care.

PENNSYLVANIA HORTICULTURAL SOCIETY.

DISCUSSIONAL MEETING, DECEMBER 1, 1863.

The President in the chair.

No written Essay on the topic,

"WINDOW GARDENING,"

was presented.

The President—The most successful window plants I have ever seen were grown by country ladies in a cold parlor; cactuses, wax plants and others were remarkably vigorous and thrifty. The great difficulty consists in the hot, dry atmosphere of most living rooms. The old fashioned Daphne is excellent for this purpose.

Mr. Hibbert—Tradescantia is a good plant for hanging baskets. Lobelia is one of the best window plants and easy to cultivate. Geraniums generally fail, even in a warm room.

Mr. Satterthwait—Window gardening and greenhouse culture are very different; the conditions are quite dissimilar. There is something quite puzzling and difficult about it. Many succeed but cannot tell how or why. Knows of one window which has always a beautiful array of plants; Geraniums, Bouvardias, Begonias, Ferns, &c., all do well. A lady friend had a small plant of rose geranium, which she grew, in a window, to the height of 4 ft. A cutting from the same original plant in his own greenhouse only attained 6 to 8 inches.

Dr. Burgin explained the treating and chemical action of the rays of sunlight, upon plants. Has seen plants in a perfectly tight glass box, to thrive well, if furnished with abundant sunlight. Curtained rooms are not favorable for healthy life either of plants or animals.

The President—The difference in the moisture of the atmosphere of a parlor and a greenhouse is an essential point. An ordinary bay window covered with a sliding sash and the shelf spread with wet sand, as recommended by Dr. Jack, in his essay

last year presents favorable conditions for healthy growth of plants. Another great point is to have the room cool.

Mr. Kilvington—Window plants fail more from want of proper moisture than any other cause. The roots die for want of water. The small roots on the outside of the ball of earth dry and die first. Camellias drop their buds if not well watered. The watering is often, too often, a mere sprinkling, not moistening the soil one-half inch deep. The water should always be applied thoroughly, so as to wet every particle of soil in the pot, but not so as to *soak* the roots; the pot should be well-drained. The finest Cuphea he ever saw was grown by a shoemaker in a close hot room, about 12 feet square; it covered the whole window. Would recommend Camellias, for room culture to be in double pots with wet moss or sand between the inner and outer pot; if well watered, they will not drop their buds. Double-flowering Volkameras and Myrtles do well. He severely reprobated the use of curtains or any impediments to the sunlight.

Mr. Hibbert—Had remarked the same general fault, as Mr. Kilvington, —a want of proper attention to watering. Malviaviscus is a good window plant. In an east room, with no fire, has succeeded well with Geraniums, Begonias and Fuchsias. Bulbous plants, hyacinths and the like, do best in moss, which is preferable to loam for house culture.

Mr. Kilvington confirmed Mr. Hibbert's remarks about moss. It accorded with his experience.

The President—Moss well pulverized is stated to be preferable to sand for striking cuttings, and for propagating generally.

Mr. Hibbert—Fine charcoal is better than either.

Several members spoke of the use of Ivy growing in pots for the decoration of parlors.

Mr. Eadie—Ivy for parlor screens is very fashionable in Great Britain. The pots are attached to the screens, which are made movable; and when covered with the foliage, form convenient and graceful shelter for tête à tête conversations.

The President introduced the subject of blue glass in graperies and plant houses, and desired the experience of members.

Dr. Burgin made some instructive remarks on the general action and effect of the sun's rays, the cause and nature of light and its influence upon vegetable life. We regret that our reporter became too much interested in them to take full notes for publication.

CONSTRUCTION OF GREENHOUSES.

BY PETER HENDERSON, JERSEY CITY, PA.

In your January number I gave our manner of constructing a Propagating house. I now proceed briefly to describe our Plant Houses, which are used for growing Roses and all other kinds of bedding plants.

The external construction of them is in all respects the same as in the Propagating house, except that the ridge and furrow system is adopted, as represented in the accompanying sketch.

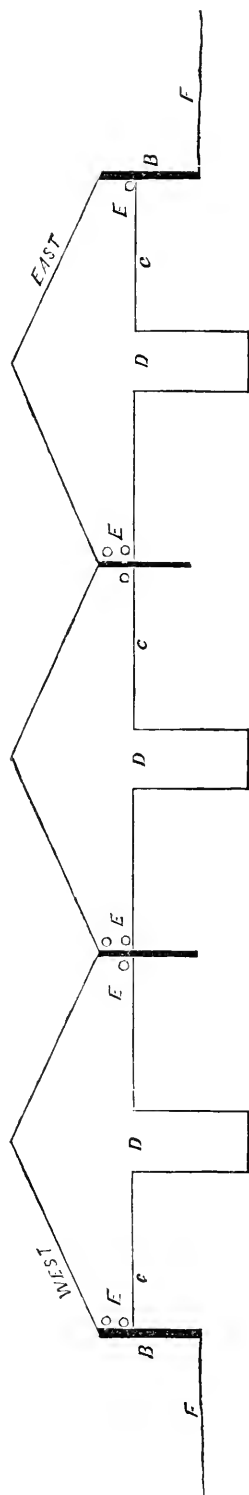
The advantages of this plan are so manifest, that the wonder is that it has not got into general use long ago. Its claims over detached houses, are *economy of space*, *economy of heat*, (having only two exposed walls), and *economy in cost of construction*. The only objection we have ever heard raised against it, is the imagined difficulty in removing the snow from between the houses. But this is a very small matter compared to its great advantages.

Our plan is to connect only three houses together, as shown in sketch, and as there is a space of 9 or 10 inches between the houses, a man can walk along and throw the snow over each house, to the right and left. Last winter the snow never once required to be taken off, but to-day we had some 9 inches of snow, which a man removed from the three houses in less than an hour. So convinced am I of its great advantages, that I intend to remodel, next season, my whole greenhouse establishment after this plan. They will be constructed three together, 100 feet in length by 11 feet in width each; each three heated by one boiler. The outer-walls will be of brick; the dividing plate will be a timber 3x12, resting on locust posts or brick piers. The whole three houses may be as one; but we prefer to have board partitions dividing them, as the different plants grown may require a different temperature.

This system may be adopted by adding on to houses already erected, or with beginners, who only require one house, it may be so erected that one or more may be joined to it, when the increase of business demands it.

Houses so constructed are extremely easily worked, the plants, though near the glass, are *under* the hand and eye, consequently easily watered and easily got at in shifting, filling orders, &c. I am perfectly satisfied that better plants can be grown in such houses with half the labor, than in lean-to houses, with stages, or in high and wide spans with the centre stage or table.

The interior arrangements must be somewhat in accordance with the kind of plants grown, and the



E 4-inch pipe ; 3 inches in each house.

F Ground level.

B Brick wall, 3 feet high.

C Bench or table, 4½ feet wide. For plants.

D Pathway 2 feet wide, 7 feet high.

nature of the ground you have to build on. If dry, it is preferable to have the paths sunk 16 or 20 inches, and the soil thrown on to the bench on each side, and the side planked or walled up with brick, making the bench for the plants of solid earth. But if the ground is wet, the pathways had better not be sunk; in this case, the benches will require to be made of boards, and the flue or pipes passing under it.

It will be understood that the roof is formed of 6 feet sashes, the ridge piece, as in the Propagating house, being without a cap, and aired by the same method, every alternate sash being fixed, the other lifted up when air is wanted, by means of the iron bar.

Many of our leading nurserymen and florists are now adopting the ridge and furrow system; among others, Parsons & Co., of Flushing, L. I., have four houses so connected, each 100 feet in length, now in course of erection.

NOTES ON PEACHES.

BY S. F. T., CHESTER CO., PA.

If some reader of the *Monthly* had given his experience or observations on the productiveness and quality of peach trees, and fruit, five years ago, I would (and many others) have been saved the labor of planting many worthless varieties. There is to me nothing more interesting than the experience of working, practical pomologists, and annually as fruit ripen, if each of us would in visiting our orchards, always have a memorandum book with us, in which to record on the ground, the comparative merits of the various kinds, for publication in the *Monthly*, how much labor or money would be spared planters? and how soon would nurserymen's catalogues be shortened? With this object, I contributed short articles to the *Monthly*, last year, and I now propose continuing the practice. I have not the same result quite, in all cases, this year as last, but no matter, having no particular pets, I give the facts as I find them. This year, as last, Druid Hill was the most productive, as it is also one of the best. Both years, all the trees of this variety, were loaded. Stump the World was not quite so good as the first, but the trees were full of more showy fruit. Troth's Early Red, very full of fruit of second quality. Smock, loaded with fruit, which for eating from the tree, is hardly second rate, but with sugar and cream, is good enough. Delaware, President and Old Nixon are good bearers, of good merit, the first of the three much the best. George IV., this year, bore a full crop of

fine sweet fruit. Not so last year. Crawford's Early, both years, were full, and the fruit is first rate, and one of the largest and most showy kinds. Ward's Late Free, fully sustains its character for productiveness, this year; the trees bore a full crop both years, and the fruit uniformly fair and good.

Early Red Rarripe is not productive with me, but the fruit is perhaps the most luscious of all my varieties. Morris' White bore moderate crops of fine sweet peaches, and it grows in favor with me. The trees grow also in health and vigor, though an old variety. My estimate of the value of this peach has much improved. Those who have eaten it only after some days, and taken too, from the tree before being fully ripe, know little of the good qualities of this peach. In the latter case, it is dry and second rate, while good specimens, taken fully ripe from the tree, are juicy, sweet and rich. The comparative merits of the various kinds, for canning, would form an interesting article of itself, but I must not digress further than to say, that for this purpose, Morris' White is, I think, unsurpassed. In order to make this comparison, I will add, that in canning, we do not mix varieties, but keep all distinct and work carefully each kind as the cans are filled. The Snow Peach, while similar to the last, is in all respects hardly as desirable.

Cole's Early bore this year for the first, the trees being young. It is a vigorous tree, and will bear, I think, fair crops of fine showy peaches of second quality. Cooledge's Favorite, about the same in quality and productiveness. Grosse Mignonne trees were loaded last year, and the fruit was the first to ripen. This year while the trees were full of fruit early; afterward many suffered from curculio and fell off. This variety suffered more than any other kind, with me, from that little insect. Smock was badly stung, but it resists the curculio better.

Of all peaches in our list, Crawford's Late is certainly the most splendid; the fruit also is very good, and very large, but the trees bear only moderate crops. Susquehanna is still larger, but not so richly colored; and this feature in the Crawford is so well marked, as to place it far ahead of any peach that I have yet seen. The Susquehanna is with me a very shy bearer: both years the trees had but a dozen or so on each.

Harker's Seedling bore this year and last; but, while I am still undecided, I am inclined to think it is no acquisition. Early York is not a good bearer yet, with me, nor so early as Grosse Mignonne, though the fruit is better. Gorgas, being a young tree,

bore for the first time this year. The fruit is nearly as large as Crawford's Late; quite as good but not so splendidly colored.

Morris' Red Rareripec and Brevoort's Morris, both bore for the first time, being young, as also the Late Red Rareripec. All these are very good; the latter may be first rate, but whether all will prove productive, I will leave for another year to determine.

Noblesse Heath Cling, La Grange, Amelia, Golden Ball, New York Rareripec, Maiden's White, and Honey, seem unproductive. The last, however, deserves for its singularity, a little more notice. The tree makes slender shoots, loses its leaves earlier than any other kind, and yet, though yearly loaded with young fruit in the spring, it suffers so from the cold as to lose both fruit and leaves. Often, when in bloom, it seems to be a sheet of flame. With a little protection in winter, it would be, probably, one of the most productive of peaches; while for house culture it would doubtless answer finely.

The fruit is most singular and beautiful, having at the apex a curious beak, which also appears on the stone. While not so smooth as a Nectarine, the down is very short, and altogether the appearance of the fruit, that reminds one, of the candy imitations at the confectioners. It is the sweetest of peaches, rendering the use of sugar quite unnecessary, when eaten with cream. Now, that sugar is 18 cents per pound, this is quite important. It is, however, deficient in flavor I fear, though when the fruit is from high up on the tree, it may be all right in that particular. This year our older trees lost all their fruit, and the few that ripened, were from one year old trees in the rows; of course they were shaded.

Will no one say a word for the Nectarine?

Perhaps my experience, with this handsome variety of the peach, will interest some.

And though this article may be tedious enough already, I will add a little more, in the hope that a fruit so little known, may be more generally cultivated.

The few that I have raised this year, have afforded a great deal of pleasure, but are in this region a decided curiosity. I showed them to many persons, not one of whom could say what they were. The trees bore one year from the bud. A variety which was received as Early Violet, was by far the most productive, but the Stanwick was twice as large and much the best of seven kinds. The seed of the last is very large, and the fruit cracks some, which spoils its appearance, but does not interfere with its quality.

ATTACHED GREENHOUSES.

BY C. H. S., PHILADELPHIA.

The pleasure the writer has derived from a small greenhouse, attached to his dwelling, has induced him to pen the following, in the hope that some of your numerous readers, contemplating building one, may "go and do likewise." The advantages of an attached house are manifold. Your plants are always under your eye, (also, delightfully under your nose,) and are at all times easily accessible. In the dreary, sleepy winter weather, you are not compelled to bundle up to attend to them, or to enjoy their beauty and fragrance. The fires are always under your control; and if an unusually cold night should make danger from frost liable, you can open a window or door from some heated room of your dwelling, and retire to bed, without any misgivings of frozen plants, and blighted hopes. And then think of the beauty of a healthy collection of plants, in full bloom, seen through the window of a sitting room or parlor. The eye, tiring of the monotony of a dreary winter landscape, rests with delight and pleasure on the fresh verdure and rich coloring of this tropical picture. Here, with even the window closed, the odor of the Daphne, the Jasmine, or the Mahernia, will fill the air with fragrance. And let the wind blow ever so bleak and cold; a step from your hall will take you into a climate of perpetual spring, where the warm sunshine is unfolding the blossoms of rare tropical plants, or developing the tiny seed into tiny plants, or liberating the globules of oxygen, from your algae in the Aquarium; rising slowly one after another, to the great wonder of your fish, who instead of a delicious morsel, find them as empty as the apples of Sodom. A pane of thin glass separates all this beauty from an Arctic winter. If confined to your house, from illness, you can still enjoy your greenhouse from your sitting-room window. There is also a great saving of fuel, if your house (situated as mine is, in an angle facing, S. S.E.) is protected from the W. and N.W. and N.E. winds. For those having extensive Horticultural Greenhouses, these remarks are not intended; for those, however, a conservatory must be indispensable. But for persons, intending having the one small house, I would say, by all means, have it attached, if possible, to the dwelling.

It may be interesting to some, about stocking their house, to know what plants to choose for winter blooming. The following are in full bloom now, (Nov. 20th,) and most of them will continue in bloom all winter:

BLOOM ALL WINTER.

Bouvardias, rich scarlet trusses.

Ageratum, light blue.

Oldenlandia, fine light flowers, in profusion.

Lopezia rosea, bright, pink, airy and graceful.

Tropaeolums, scarlet, orange, maroon, &c.

Browallia alata, bright blue, loaded with flowers.

Oxalis grandiflora, pink and white, large flowers beautiful.

Salvia coccinea, bright scarlet, in tall spikes.

Begonia incarnata, light pink, very beautiful.

WILL BLOOM SOME TIME YET.

Begonia Sandersii coral, pink.

Stevia serrata, white, fine for bouquets, fragrant.

Epiphyllum truncatum, bright crimson, over fifty flowers in 6-inch pots.

Epiphyllum violaceum, bright crimson and white.

Belleperone oblongata, bright pink, very pretty.

Daphne odorata, white, delightful spicy fragrance

Heterocentron album and roseum, indispensable.

JUST GOING OUT OF BLOOM.

Justicea carnea and magnifica, pink, indispensable.

Veronicas, blue and purple.

Also, Jasmines, Salvia Mexicana, Scarlet Sage, Abutilons, Camellias, Heliotropes, Lantanas, Petunias, Canna Warscewiczii, Isotomas, Habrothamnus, Oxalis Bowii Cuphea, etc., etc., are blooming; and most of them will continue until spring.

RHODODENDRONS.

BY F. L. HARRIS, G.A.R. TO H. H. HUNNEWELL, ESQ.,
WELLESLEY, MASS.

So much has already been written by practical men on the culture of the Rhododendron, that I feel it almost superfluous to add any thing thereto; and yet it is a subject that cannot be too frequently brought to the attention of the lovers of this noble, but much neglected class of plants—so adapted as they are, not only to the small country villa, but to the more extensive estates now becoming so numerous in this country.

A large portion of the admirers of this class of evergreens, have an impression that they are not very hardy—that they require a peculiarly prepared soil—and are withal so costly that they feel deterred from introducing them to their grounds.

Having had much experience and very great success in their general cultivation, a few remarks in reference to their management, may not be unacceptable to many of your numerous readers.

Many who visit the country residence of H. H. Hunnewell, Wellesley, are struck with the quality

and general good health of the Rhododendron, and ask how it is, with a soil naturally shallow and poor. They are made to grow so luxuriant and withal flower so profusely. The secret is in making this soil retentive of moisture. Whoever acts on this principle, need not fear the result, but will in after years realize the benefits from a proper preparation of the soil.

Situation and Soil. Choose a cool, moist, north-eastern aspect, where they can enjoy the morning sun, and where the pure air of heaven can find uninterrupted access. Should not it be possible to obtain such a location, they will thrive admirably under the foliage of any Pinus family, protected as they must be from the finer rays of the mid-day sun. They delight in a light sandy loam, with a plentiful supply of decayed leaves, or in fact, any vegetable substance, such as swamp muck, peat, sawdust, &c., well incorporated, and the border prepared to the depth of two or three feet—the deeper the better. This is all important, it being so essential to their vigorous growth in summer, when the whole energy of the plant is required to form flower buds the ensuing year.

Planting.—During the past seven or eight years, I have planted and replanted nearly two thousand, some of which, were, when removed, fifteen feet in circumference, and I have invariably found the last of August, for their removal, by far the most preferable season, as it enables the plant to get well established before winter arrives, whereas, if deferred until spring, the severe check they receive, and the excessive evaporation from so large a surface of foliage, impairs and cramps their energies, giving the appearance of living skeletons.

In selecting plants, obtain such as are dwarf and bushy—say one or two feet high—and plant thick, if they nearly touch each other the first or so—so much the better—affording each other protection from drying winds in summer and shelter in winter. When the plants become too crowded, gradually remove to another location.

After Culture.—In summer all they require, is to be kept free from weeds by constant light stirring of the soil. In autumn cover the borders six inches deep with fresh leaves, which prevents their delicate silvery roots from injury by frost or sudden changes.

Pruning.—This is essential, when a symmetrical specimen is required, but in masses it is seldom necessary to resort to it, unless when a shoot grows too luxuriantly; in this case, I prefer pinching the young growth, rather than waiting until May, to cut them back with a knife.

Sorts.—The following are very hardy, good and comparatively cheap :

Delicatissima, blush, changing to white ; a pleasing variety.

Purpureum elegans, a noble trusser and very fine.

Roseum elegans, a general favorite.

Archimedes, bright rose, light centre, most distinct and beautiful.

Atrosanguineum, intense blood red, fine foliage, late blooming.

Corregio, bright crimson, fine.

Victoria, claret, extra.

Album elegans, white, green spots, good shape, one of the best.

Bicolor, rose, with a distinct white spot on the upper petals.

Calestinum, fine blush, with yellow eye.

Gloriosum, large blush, excellent.

Splendens, rose, good.

THAT WONDERFUL BOOK. "THE BOOKE OF THE COUNTRIE FARM," BY RICHARD SURFLET.

BY L.

FRIEND EDITOR:—I think I never was so forcibly impressed with the value of science in its applications to Horticulture, and with the worth of just and correct teachings, as contradistinguished from the empiricism and superstition of the middle ages, as on reading that wonderful work, '*The Booke of the Countrie Farme*,' by that rare old writer, Richard Surflet.

This heir-loom of two centuries has been thumbed almost to pieces by seekers for the profound knowledge its pages revealed, one half of which, I hope no reader ever gave credence to. For such a melange of sense and nonsense, fact and fancy, truth and falsehood, superstition and folly, I trust was never before or since put forth for the serious perusal of any farmer or gardener. I would excuse any farmer all his dislike, even hatred, for book farming, had his experience of the backings of books been derived from this work.

It contains, however, some good things. Some, we imagine, new. Thus he descanteth nearly three hundred years ago. 'Some do ordinarily plant stocks of the Garden Quince Tree, and graft Pear Trees thereon; as also Apple Trees and great Peaches. The fruit whereof, taste as if they were Peach Plums, but they must be grafted one-half a foot within the ground, because they never have any faire trunk, and being grafted thus low, the graft will put forth roots of itselfe, which will make it endure and continue the longer time.'

Here is something valuable, and will not be doubted; we quote verbatim:

'To cause fruit to grow, that shall be halfe peach and halfe nut, take an eyolet of the one and the other, and cut them as neere the eyelet as you can, both the one and the other, and scrape their bottoms a little; then joyning them, bind them verie well together, and after cut away their toppes; the fruit growing from these will be halfe peaches and halfe nuts.'

'Write what you will in the eyelet of a figge tree, which you meane to graft, and the figge growing thereof, will contain the said writing.'

In the chapter 'of remedying of strange incidents, that may happen unto Hearbes,' we find: against Haile, ancient men were wont to set the whole compasse of their growth about with white wild vine, or else to fasten, into the top of a high post an owl, having her wings spread.' And again 'the Lightenings and Thunderings will doe no harme, if their be buried in the midst of the Garden, a kind of toad, called a Hedge-toad, closed up in a pot of earth.'

Here is an instance of credulity of the wise acres of the time. 'He who hath sometimes beene subject unto the biting of a mad dogge, or otherwise, must not sleepe or rest under the shadow of the cervise-tree; for if hee doe, it will hazard him, to cast him into his former madness againe, etc.

The Figge-tree appears to be too much for the bulls. The following receipt is, however, defective, in that it does not state how large the tree must be, nor how long the unruly beast must remain attached thereto. It seldom grows large enough with us, I apprehend, to detain one long in durance. Perhaps the same influence that tender meat softens the 'rough flesh' of the living bull, and thus the mystery may be explained. It is certainly curious, if true.

Here is the receipt.

'Furthermore, the figge-tree hath this vertue, that if you have a wild and unruly bull, which you cannot tame by any means; if you tie him to a figge-tree, by and by he will become gentle, forgetting his natural savageness. Furthermore, to make the hard and rough flesh of any beast, tender, by and by you must hang it to a branch of a figge tree; as also to make it boil quickly, you must strirre it oftentimes in the pot, wherein it bryleth, with a laddle of the wood of a figge-tree.* * * * *

"We may further note, I know not what secret vertue in the figge, for the horses and asses, laden with figges, doe easily fall downe under their burden, and lose all their strength, which, notwithstanding,

arises easily, recovered of their strength and refreshed, if they have but given them a morsel of bread.'

The following is interesting, we commend it to the Homeopaths. *Similia Similibus curantur.*

'If a man have swallowed down a horse-leech, in drinking water, you would give him fleas with strong vinegar.'

How to grow nuts without shells, gymnosperms.

'To have nuts without shells, you must take a kernele, which is verie sound, and not any whit hurt, and wrap it in wool, or the leaves of a vine; or in plum tree leaves, that it may not be eaten of ants; set it thus, and the nut tree coming thereof, will bring forth nuts without shells. The like may be done in Almond trees, if you sometimes put others unto the roots thereof, or unto the roots, under the ground, and this also, holdeth generally in all other fruits, which have an outward shell, if they be set in this order.'

Here is reference made to the curculio. However, the little pests do not appear to have yet learned to injure the plum. He has progressed during the century past.

'There breed in trees, certain small beasts, almost like to weevils, and they are somewhat blewish blacke, and certain of them have long and sharpe pointed peakes or bills, these do great harme to grafts and other young trees, for they cut off young scions, which are yet but tender, put forth not past the length of a finger. You must at the height of the day, when you shall see them there, lay your hand upon them softly, without stirring the tree; for they let themselves fall downe, when one goeth about to take them, because they cannot quickly betake themselves to flight, and if they let not themselves fall into your hand, then reach up and take them upon the scions with your other hand.

He discourseth somewhat sensibly on cucumbers.

'The use of the cucumbers is altogether hurtful, because the nourishment and juice coming off them, is easily corrupted in the veines, whereupon there grow in our bodies, burning agues, and such as are very hard to cure. Wherefore, it is better to appoint them for mules and asses, to which kind of beasts this fruit is very pleasant and profitable, than to ordaine them for men's food and sustenance. * * * Some say that a cucumber, placed long-wise near a child, which hath an ague, being of the same greatnesse that the child is, doth deliver it altogether from the ague.'

Grafting was a remarkable art in Ancient times. Many of the apparent attachments of graft to stocks of incompatible nature, were frauds upon the sim-

plicity of the ignorant. But there seems to be no room for deception in the following, which appear to have been genuine grafts. The observer of the process, I apprehend, was impatient, and did not await the result, but drew upon his fancy for the promised fruits.

Important, if true.

'If the White Poplar be grafted upon the Mulberie tree, it will bring forth white mulberies.'

'Graft a Plum tree graft, or any other fruit-tree graft, upon the figge tree, and you shall have your fruit without blossoming.'

'Peares will have no stones, if at the first you pike away the stones and all other gravel from under them, very carefully, making the ground where the tree shall stand, free thereof, and withal lay upon it at the roots, being planted good store of sifted earth, watering it afterward very diligently.

How to produce evergreen oaks and live oaks.

'To cause an oak or other tree to continue greene as well in winter as in summer; graft it upon a Colewort Stocke.'

'Graft Chesnut and Caliot Peare trees upon a Gooseberies bush, if you would have them to beare their fruit early.'

'Graft the graft of the Peach tree upon the Quince tree, you shall have peaches and quinces together.'

The graft that is made upon the Alder Tree or Oake, bringeth forth a very strong tree; but if it beare fruit, yet the fruit is of no savour or taste.'

'You shall have cherries on many trees, which will be good to eat unto November, if you graft the Cherry tree upon a reclaginer Mulberrie tree, and upon a wild one.'

The writer of the above, and fifty more as valuable receipts for grafting and changing the quality of the fruit, to be green from the graft, has this one sensible paragraph.

'The grafting which is performed to a graft upon a tree, correspondent and answerable to the nature of the graft, proveth of most beautifull growth and most fruitfull and his fruit most durable; which falleth not out when this correspondence, sympathie, and fellowship is wanting: and this is the cause why the Peach tree thriveth better, being grafted in the Plum tree, than elsewhere, and the Peare Plum tree in the Almond tree, and there continue a long time.'

This folio of about 740 pages, appears to have been written about the end of the 16th Century, say 1580, as deduced from the reference to dates therein. It, no doubt, was considered a full treatise.

tise on Agriculture, Horticulture, Domestic Preparation, Distillation, Preserving Fish in ponds, Surveying, Vine Growing, Care of Game, of Woods, Dogs, Deer, Rabbits and Birds, for the time it was written. It doubtless cost the venerable Surflot a life-time of research, and brought him fame in his day, which has not, however, proved enduring, for I cannot find him named in any biographical or bibliographical work to which I have access.

Thou venerable volume, scored and seamed by the ruthless scythe of time, how hast thou been pored over by seekers for the wisdom they deemed thy pages held. How trusting have the young eyes of full two centuries, read the wonderful virtues of the unfailing compounds thou recordest. Now torn and leatherless, browned and dog-eared thou art thrown aside subject for ridicule, a monument of the folly and ignorance of the age that produced thee. Not without merit art thou, nevertheless, for thy strange stories are interlarded with many truths, and much that we deem recent finds a record in thy time-honored pages. We will treasure thee for these, and bless thee for the good thou hast done to our fathers, but while we do so, thank our stars we live three centuries further down the course of time—that since thy days, the lights of science have arisen, and upon the darkness a Linnaeus, a Knight, a Van Mons, a Downing and a Lindley, have taught the true principles of Horticulture, filled up the wide gap of 300 years between thee and us, and in thy place given us the truths of nature without the illusions of fancy.

GRAPES.

BY W. C. STRONG, BRIGHTON, MASS.

MR. EDITOR:—I am somewhat tardy in complying with your request, to state my experience in respect to the profit of growing Grapes for the Market. It is very certain that one rule will not apply to all parts of the country. Even supposing the best varieties will do equally well in the different sections, yet the growers near cities should study to bring in their fruits when the market is not glutted by the products of the cheaper lands of the interior. To a considerable degree, it is the same with the fruit-grower, as with the vegetable market-men. Growers, near the suburbs of cities, strive to bring in their produce early. I know it is customary to say, that the supply of fruit is not equal to the demand, and that the demand is likely to increase in still larger proportions. But my experience does not warrant me in following

the same opinion. I do not doubt that fruit-growing is, and will continue to be, profitable. But it will not do to base our estimates upon the pieces, which some give, and which they claim, will even advance. We have seen estimates on the profits of an acre of grapes, at 20 cents per pound. The Delaware has been gravely quoted even at 50 cents per pound. Now the fact has been, that for the past two years, the best Ohio grapes have been retailed in the remote market of Boston, at 15 cents. Those who have had experience in the cost of transportation, and in the commission of dealers, can estimate the serious shrinkage to the producer. The producer could not expect to net over 10 cents, and probably not so much. But this price is undoubtedly remunerative, upon the cheap and fertile lands of the West. Yet at the East, we must do better than this; we must bring in our fruit in advance. Hence, we must seek for the earliest varieties and bring them in early. I have spoken well of the Hartford, for the purpose, and not so well of the Concord, and of course, Western growers would consider my opinion of little value. But the facts with me are as follows: the Hartfords find a clear market and are bought at 20 cents net, for say a third part of the crop, from the 10th to the 15th of September, and at 15 to 18 cents for the balance. On the other hand, the Concords come in with the Isabella and Catawba of the West, and must submit to western prices. The fact that the Hartford is liable to drop, is no serious objection, to those who live near a market, and indeed it is an advantage to such, as they are saved from the competition of producers at a distance. It will not appear strange, then, that I continue to speak well of the Hartford. We are not discussing quality now; it is simply a question of profit. And the Hartford has yielded me, at least a third more profit than any other of fifty varieties. It must also be understood, that the opinion refers only to the Boston market. There are scores of grapes which, as far surpass the Hartford in quality, as it does the Perkins. But can they be grown cheaply and in quantity for the market?

The Delaware takes from one to two years longer time to come into full bearing. Then it is, with us, liable to mildew, and as an average rule, must ripen its fruit, for the last three weeks, upon half fare from its leaves. If it were not for this, it would be earlier. But it is early and most excellent. Yet it is so small and so light. We weighed some remarkably fine premium bunches, at our annual exhibition. Being absent from home,

I have not the notes by me, and am afraid to say how much the six bunches weighed. Did you ever have any experience in raising the beautiful little Rose Chasselas, for profit? A charming variety for home use and for presents, but I think you could hardly stick enough fruit upon a vine to make it weight for the market. This would not be true of the Delaware to this extent. Yet I am sure, if the producer judges of the weight of his crop from the appearance of the bunches on the vine, he will be woefully disappointed. Boston is said to have notions, and so it has, whether others may have or not. Boston does not like the size and appearance of the Delaware. Luscious black grapes, with a rich bloom, with a sprinkling of white, for relief, are preferred for making up a showy dish. I think the color of the Delaware is beautiful, but there is some truth in the objection, that the little pale rose bunches sink down and are lost, for effect. In short, the result is, that those who know and love good fruit, are glad to pick it up; but it is not, and I do not think will be in such demand as to command fancy prices. My experience is, that it should sell for 30 cents per pound, net, in order to be as profitable as the Hartford, at 18 cents. Let me mention one other variety, as a type of another class. The Union Village is late, scarcely ripening with us. Yet it is less liable to mildew than the Isabella, and with good management, can be generally ripened. It is large and remarkably showy, and will, therefore, command an extra price. Such weighty bunches cannot be brought from a distance, without destroying the bloom and beauty. Here again we can get an advantage, and I am inclined to think the Union is a good market kind for us. The Creveling bids fair to displace the Hartford, unless a tendency to mildew, first observed the past season, shall prove to be serious and permanent. I do not speak of some of the newer kinds, of promise, since I am limited to the actual results of my experience in our market. Again, I must beg, in conclusion, that the above may be considered as the verdict of our market, rather than any expression of opinion as to quality.

FLUES.

BY J. W. H.

In a former number I noticed an article on furnaces inside the houses: but have my doubts as to the utility of the practice. It seems to me that no matter how tightly you may board off or separate the stoke hole from the rest of the greenhouse, the air that supplies the stoke hole or furnace,

must be drawn from the atmosphere of the house, and by just so much, is the temperature reduced as shown in the *Monthly* referred to. To set off against this objection I see no advantage. There is the dust, the annoyance, the room lost, the extra labor of ashes in and out, and the dirty appearance; for with the best arrangements it will look so at times. Again, what is the disadvantage of outside furnaces? Is there any heat of consequence lost? I think not. When standing near the furnace door, it seems warm to be sure; and the snow melting on my trap-door over the furnace, shows a little lost; but the slow manner in which the snow disappears, shows how little that is. After all, is it not an advantage to have the stoke holes warm a little? I should suppose the warmer the air before entering the flue, the less fire would be required to warm it.

One word more about the fire brick flue pipes. Three years ago I saw them recommended, by Mr. Saunders. I pulled away my brick flues, and put up these in their place. I was told, when asking if they would crack, 'probably they will, brick flues, boilers and everything crack sometimes; but these probably no more easy than they.' One day while watering plants on the stage over the flues, when the flues were very hot, some water fell on a pipe, and it immediately cracked along its whole length. I was sure my old brick flue would not have cracked so easy, and I felt pretty indignant at Mr. Saunders, and the whole crew of Horticultural theorists, as I called them. To save my flue, I put at once a piece of wire round it. It kept that way the whole season, and I was so pleased with it afterwards, that it has remained unto this day, and I don't care how many crack, for I would not throw away the pipe and return to the flue for all the bricks in Pennsylvania. My pipe is fifty feet in length, and in a few minutes after the fire is alight, the heat is at the extreme end. Before we could never get the end of the brick flue warm, and before a very severe frost, it was necessary to have a fire alight a whole morning before, to be sure of keeping out frost, which it was then very difficult to do.

I am opposed to mere pipes against flues; but with pipes and *wire*, I think it makes perfection.

[We doubt whether our correspondent's suggestion about warming the stoke holes, amounts to much; for the heat comes from the fire to do it, and is by so much lost to the flue; but on the other hand, it is generally admitted, that in all these heating arrangements, mere theory amounts to little, as a very small circumstance in construction will alter a whole plan. There may be 'some-

thing in it.'

As to the wire round the flue pipe, our correspondent need not lay claim to that discovery. We know several whose pipes are fixed in the same way. The wire neutralizes any objection to the cracking of the pipes.—Ed.]

JOHN BARTRAM.

BY S. L. B., NORRIDGEWOCK, ME.

I honor the name of this old botanist, and should never weary of reading about his useful and honorable life. Every lover of botanical science, owes a debt of gratitude to the late Dr. Darlington, of West Chester, Pa., for preserving, in such an admirable volume, the memorials of his life, as illustrated by his correspondence with the eminent men of his day; and no portion of the volume is more interesting than the delightful account of his home and daily life, as furnished by a "Russian gentleman" named Iwan Alexiowitz, after a visit to Bartram, in 1769.

For several evenings past, I have been reading Dr. Darlington's 'Memorials,' and took up my pen, just now, to refer to one or two things that especially pleased me, in looking it over.

The first is Mr. Bartram's account of a 'scheme' by which he was to confer a great benefit upon the farmers of the colonies, contained in a letter to Dr. Alexander Garden, a distinguished physician and botanist, of Charleston, S. C., dated March 14th, 1756. This was, first: to bore the ground to great depths, in all the different soils in the several provinces, with an instrument fit for the purpose, to search for marls or rich earths, to manure the surface of the ground; second, to search for all kinds of medicinal earths, sulphurs, bitumens, coal, peat, salts, vitriols, marcasites, flints, metals, etc., and third, to find the various kinds of springs, to know whether they are portable, medicinal or mechanical. Mr. Bartram's directions, in regard to carrying this 'scheme' into operation,—which would occupy too much of your room—as contained in the letter, are curious, minute and original, and well merit the following foot-note from Dr. Darlington:

'This scheme of John Bartram's—if original with him—would indicate that he had formed a pretty good notion of the nature and importance of a *Geological Survey and Map*, more than half a century before such undertakings were attempted in our own country, or even thought of by those whose province it was to authorize them.'

Bartram's style of writing, as exhibited in his letters, is remarkable for simplicity, terseness, ori-

ginality and vigor. Occasionally it is surpassingly beautiful, as witness his description of the almost countless array of flowers, contained on pages 398, 399, of the 'Memorial.' This was one of the many things that delighted me in reading the work, and intended to copy it in this connection, but find it will take too much time. If you have the volume at hand, my dear Mr. Meehan, will you publish the extract in the *Monthly*, for the pleasure and benefit of its numerous readers?

In your second volume, you gave a portrait of John Bartram. Can you not insert it again, that your new subscribers may have the privilege of beholding the amiable and happy countenance of this patriarch of American Botany?

[Our correspondent will find by a subsequent correction, the portrait we gave was of John Bartram's son William, as great a botanist, though with greater opportunities than his father. There is no portrait of John the elder, in existence, that we can find. The extract shall appear.]

NOTES ON GRAPES.

BY OLIVER TAYLOR, LOUDON CO., VIRGINIA.

A very cold, late spring and wet summer, followed by a dry autumn, caused every variety, without a single exception, to show some mildew on the leaves; but a few were so little affected as to not injure the fruit: such as Clinton, Delaware, Purple Favorite, Lenoir and Concord. All other varieties lost so much of their foliage as to cause them to be imperfect in ripening. Some varieties, as the Rebecca, Allen's Hybrid, Garrigues, Constantia (or Cape Grape), most of Rogers' Hybrids, Ontario, Cassady, and some others, a little; whilst others remained green, and part, or entirely, were not ripe enough to eat when frost came: such were Catawba, Diana, To Kalon, Franklin, some Delawares that overbore, and a few others.

As to the quality of the Concord here. It is not good on young vines generally, but on older vines it improves so much that the most of persons prefer it to the Catawba for the table; and when in its perfectly ripe state, is very far superior to what it is when just colored; so it is not surprising that persons living in different parts of our country, should differ as to its merits. With us it gets thoroughly ripe; and if there is any rain about the time it is perfectly ripe, the berries crack open, and if not soon gathered, the birds are apt to eat them.

Why has the Clinton grape been passed by as of little worth? With us it proved to be our only dependence this year: it was not affected among the late varieties. When thoroughly ripe it is very good; and for family use, to cook, it is far better than the Catawba, making a sweeter and higher flavored marmalade, which, by the bye, is an article that seems to be ignored by the public without a trial; yet, so far as I can learn, is much relished by every one who tastes it, and it is at the same time one of the most refreshing and substantial articles in the fruit diet. The vines bear more neglect than any variety without injury, though it well repays high cultivation.

The Gardener's Monthly.

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✍ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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ROSES.

Can any thing new be said of Roses?

"Tis hard to venture where our betters fail,
Or lend fresh interest to a twice told tale."

The pens of the wisest of all ages have failed to exhaust the Rose subject,—and if a tale loses its interest by being repeated, dull and uninteresting must the Rose story be.

Still, we will venture one word more. If what we say be not new, it will, we trust, be true; and we are sure will add to the interest of our gardens and grounds if acted on.

Almost all Roses but Hybrid Perpetuals are unfashionable. Every one wants Hybrid Perpetual roses. They call them monthly roses; but the best claim most of them have to the distinction, is that they have a few flowers per month. One half of them do not have as many flowers throughout the season as a good Hybrid China or June Rose, would have in that single month. Yet we would not have one Hybrid Perpetual less than we have. No garden is complete without a good stock of them.

But the tenderer Teas, Chinas, Bourbons, and Noisettes, how seldom do we see them in the great beauty they are capable of affording? Occasionally one meets a tolerable Hermosa, Louis Philippe, or one other or so, of the hardier individuals of these classes, but so rarely as to amount to nothing at all. Most of them will just live through our winters; but injured so much, that they never get to be much above herbaceous plants. Some have better plants of them than others by protecting them in winter with straw or leaves, or bending them down like the Raspberry, and covering with earth; but with the best of these modes of protective treatment, they are always injured more or less, and the plants never reach any great size. On even a moderate scale, these modes of treating half hardy roses cannot be dispensed with.

However, some few plants of these choice and

tender kinds we should like to see treated as tub plants, to be grown for lawn purposes, and the summer decoration of gardens and door-yards. We have now Aloes and Cacti, Oleanders and Oranges, Fuchsias and Abutilons, and many other things,—but we rarely see Roses.

But what can be prettier? What can look better in every point of view? We suppose people grow Oleanders and such things in tubs, because they cannot have them at all through our winters in the open air, when they can have something of a rose; but there is no comparison between the roses, as they are in our gardens, and roses as they might be by careful and slightly protected culture in pots and boxes.

What would be more effective than an avenue lined by fifty or a hundred boxes of choice Roses, six feet high and three feet in circumference,—perfect cones or pyramids, with hundreds of fragrant blushing blossoms, opening from bottom to top? There are few of even the most delicate that might not, at least by the grafter's art, be brought to this height and condition,—and then so easy to protect them. While your Oleanders and Lemons, and other favored plants, must have expensive greenhouses; or, at any rate, warm cellars or rooms to care for them in winter; Rose-boxes might be stowed away in a barn or out-building, like so much lumber; or as grocery cases in a store, one above another, in many cases, with the branches standing up in the spaces between. No degree of cold we have seems to hurt the tenderest of our roses. The trouble seems to be our warm February and March suns on the frozen wood; and against these a barn or shed is an efficient protection.

The time will soon come when steps can be taken towards carrying out the idea. Let the strongest and most likely looking specimens be selected this spring; and as soon as the early spring frosts are gone, prepare a small tub for plants selected. Let the soil be of a turfy character, enriched with any well-decayed manure that may be at hand, in the proportion of about one-sixth of manure to the whole. Of course the tubs must be 'drained,'—this is of a truth a 'twice-told tale,' but it bears interest for all. When the plant is potted, or rather tubbed: for pots should not be used: they would burst with the frost in the sheds in winter—set it in a partially shaded place for the summer. It would be best to have no flowers bloom the first season; each bud may be pinched out as it appears; and if the fine pyramids we have described be desired, strong top shoots, that may rob young weaker ones, may be topped occasionally also.

The subject is by no means exhausted, but we have said enough to call attention to the matter.

DRYING FLOWERS IN THEIR NATURAL COLORS.



Probably no article ever attracted more attention among our Horticulturists than the one we gave in an early number of our magazine, as a translation from the German *Garten Flora*, on the 'Art of Drying Flowers with their Natural Colors in Sand.' Our ladies took hold of the subject with spirit, and many at this time practise the art with a tolerable degree of efficiency. Many write to us that they do not succeed so well as they could wish; but in all arts of this kind there are little niceties to be learned which no treatise can teach, and which can only be acquired by practice.

Though so long since the art has been popular with the Germans, they are only just now perfecting it. During the few past years, a few firms have taken it up as a business, or branch of business, and it is now becoming almost as extensive a trade in some parts of Germany, as the artificial flower business is with us. They are made into baskets and bouquets, and arranged in vases and hanging baskets; and they are among the most popular of presents, for Christmas or other festival days.

But—and let our lady friends who complain of partial failures, note well and take heart thereof—they find by experience that all flowers do not dry equally well; and of those that get into the market the number seems extremely limited,—and it is

worth remembering, that it is not only an art to dry the flowers, but also to find out those that are best fitted for the art. The composition of the two we use as illustrations, seems confined to the following list of flowers and grasses, with one or two others that we do not recognise in their dried state. We give the list for the benefit of our readers:—*Aeroclinium roseum*, a pretty little pink flower; *Anemobium alatum*; Roses; Zinnias, very fine and double; Pansies, looking very natural indeed, and we should judge them to be among the best to operate on; Globe Amaranthus, principally the crimson variety; German or China Asters, these look truly beautiful; *Helichrysums*, seemingly of all colors, from white and yellow to a bright scarlet, and we were at a loss to decide whether these were really their natural colors or had been dyed, as some of the grasses certainly were; *Clananche cerulea*; the Corn Bottle (*Centaurea cyanus*); different kinds of Larkspurs; Hollyhocks; *Gypsopila*



paniculata; *Sanvitalia procumbens*; *Staticee*, of various kinds; *Xeranthemum annuum*. The grasses were not numerous, and of these some appear dried. All we noted in the two sets were *Briza media*; Hare's-foot grass; Reed (some *Arundo*) small

quaking grass; Cotton grass (*Eriophorum*); Canary grass; animated Oats; and a few Poas.

We trust that those of our readers who may find other flowers to succeed well, will furnish us with a list, as also with any notes of what they find contributing to the success of this interesting branch of the Decorative Art.

A NEW WAY TO PROPAGATE GRAPE VINES.

We get our new fashions from Paris, and it is said that most of the new practical ideas of culture, originate from the French. On looking through a file of French papers recently, we found the following 'new idea,' which as it must be new, when the French say it is; we translate for our readers benefit.

'The best way to propagate the grape vine, undoubtedly is the system recently discovered, by M. Fabvier, a celebrated vigneron of the Haut Garonne. He selects the strongest of last years shoots as soon as the leaves fall in autumn, and cuts out the eyes, with about a quarter of an inch of wood, above and below the bud, at that season. He then mixes an abundance of earth with them, and sets them in a cool cellar for the winter. As soon in Spring as the ground will work, he sets the buds two inches deep under ground, and about nine inches apart in the rows, covering the depth of two inches, above the eye, with very rich soil. The vines so produced are equal in strength to one year's growth, to the strongest layers of the same age.'

Now there does not seem to an American much novelty in raising grapes from eyes: nine-tenths of the grapes sold here, being so raised; but there is for all a little novelty in successfully raising them this way, in the open air. The trouble with us has been, that in open air attempts, we imitate our hot-house practice, and set the bud just level with the surface of the ground, and our warm summer sun soon settles that business. The buds dry out before the roots get deep enough to save them. We doubt if any American propagator thought of putting a bud two inches under ground, or dreamed if he did, that a bud would manage to push through that thickness of soil.

Perhaps they will. It is at any rate worth the trial. If really good one year vines can be had from eyes in the open ground, it will be a much cheaper way of raising grapes than that now generally followed; and the plants without doubt would be considerably healthier.

FRUIT-GROWERS SOCIETY OF EASTERN PENNSYLVANIA.

We learn from Mr. Hacker, the Secretary of this flourishing society, that the Annual Meeting will commence at Meeh's Hall, Norristown, on Wednesday, 17th and 18th of February. No Fruit-growers' Society has proved itself more useful than this one, and we hope there will be a large attendance.

Scraps and Queries.

✂ Communications for this department must reach the Editor on or before the 10th of the month.

✂ The Editor cannot answer letters for this department privately.

PROPAGATING HOUSES—I. A., *Lake Mills, Wis.*
—'Will you, or some of the readers of the *Monthly*, give some practical plan of the construction of a Propagating House. I should like to know the height of walls, width, etc.; best method heating; how the beds to be constructed; location and cost. I have side hill, depending South-east and West, also North. Plenty of stone. Which is the cheapest fuel, wood at \$2 per cord, or coal at \$10 per ton? Can the tank inside be built of brick, and covered with water cement. Could the water in such a tank, 50 feet long, and return back the same length, be hot by having 40 or 50 feet of 1½-inch Gas pipe coiled in a common Box stove, with one end of pipe to discharge into tank, and the other end set a little lower to receive the returning water? Suppose the tank to be perfectly level, would there be a constant current around it? What boilers for heating do you recommend? It would be very interesting to me, and I doubt not to many other of your readers, to see a plan of a house that it would be practicable to build.'

[There are so many good plans of building propagating houses, that we shall be glad to receive from any of our readers who have good ones, some account of them. Mr. Henderson has opened the way, by a description of his in our January number; and we will gladly illustrate any other successful ones.

With regard to the special points mooted by our correspondent, we may here say that the height and width are matters of mere convenience. For propagating purposes, it is not as essential that the plants be as near the glass as rooted and growing plants. The best method of heating depends on size of house: for very extensive houses, hot water is decidedly best; for small houses, well-en-

structed, flues do well. If good lumber is cheap, and labor dear, we should use it, though stone were plenty on the ground, charring the ends of all posts set in the ground; and certainly use wood at \$2 a cord, in preference to coal at \$10 per ton for fuel. Much however depends on managing fires, which few know how to do. The proprietor of the Germantown Knitting Mills recently told us that by giving a man who understood fires \$2 per week more than one who did not know as much, he saved \$70 per week in coal,—and this is our experience. To manage fires economically is a great art.

The cheapest and best tank is to be made of White Pine boards. Have nothing to do with any small pipe in the fire,—nor, indeed, with any kind of pipe or boiler that is to be covered with fire: they work admirably for a year, or, perhaps, a little more; but the iron has never yet been cast that will stand white heat long, no matter if water be inside,—it will flake and peel away in time, and at some peculiarly inconvenient time, the thing will be found out of order. This has been the fate of all coils of small pipe,—or of large ones for that matter,—that have ever been used. A good, substantial strong boiler should be used,—one with as much surface as possible exposed to the fire, without being actually in the fire, is better than any coil of pipe. Any pipe—lead is as good as any—will serve to connect the boiler with the tank. The tank may be perfectly level: circulation is merely the effort of water to find its own level, after becoming elevated a little above the level by the expansion of warmed water. Any of the boilers advertised in our paper are good. Some of them heat quicker and wear sooner; others heat slower and last longer,—the best will depend on the peculiar purposes of each.

The subject is too extensive to be exhausted satisfactorily in this column; but our brief replies to our correspondent's enquiries may serve at least to put him on the track.]

ALTERATIONS AND IMPROVEMENTS IN THE PHILADELPHIA SEED TRADE.—We notice in our advertising columns that Mr. Robert Buist, *Senior*, has withdrawn from the Seed business, with which he has been so long and so honorably connected, in favor of his son, Robert Buist, *Junior*, under which name the business will be conducted, with, we hope, as much encouragement as heretofore. Mr. Buist, the elder, will now give his undivided attention to the nursery branch, already, in some of its branches, superior to any thing in this country.

Mr. Henry A. Dreer, too, we are pleased to notice, has out-grown his former, by no means small establishment, down town, and has purchased a magnificent store not far from the "Continental." Mr. Dreer has been one of the most liberal advertisers in the *Gardener's Monthly*, and it was very gratifying to hear him express his sentiments freely, when paying our respects to his new quarters, last month, that he owed his great success in business, as much as any thing, to the fact, that when he had any good things to sell, he was not afraid to advertise them well.

Mr. James Daniels, also, has retired from the Seed business, and intends devoting his entire attention to his Greenhouses. His establishment will be continued by two enterprising young men, under the firm of Norman & Little. We hope they will be successful, in not only retaining the old customers of the business, but in adding many new ones.

CURIOUS ERRORS.—It is often a matter of astonishment to us, how little other countries know of America, or things in it, when sources of information are almost innumerable; and Brother Prince is almost excusable for charging them with 'wrapping themselves in a mantle of intellectual exclusiveness.' It is amusing to read in the general English news, how names and localities are strangely mixed up and confused in reference to occurrences; and in our own department, the Kentucky Coffee, a leading English authority recently told its readers, is the *Puckneya pubens*. Another paper, whose Editor had seen Persimmons for sale in our markets, tells its readers, that '*apples, already roasted*, are sold by the peck in the markets of America.

PROPAGATING THORNS, &c.—*Mrs. J. E. Taylorville, Ills.*—"Will you please inform me through your *Monthly*:—*First*, Whether the Evergreen Thorn can be easily grown from seed; and if so, when is the time to plant it, and what soil does it like best? (1)

Second, Does it bear transplanting well? Should it be done in Fall or Spring?(2)

Third, In taking up some *Pæonies* last spring a number of large roots were broken off, and left in the ground; in digging the same bed this fall, I found them perfectly sound, with what seemed to be a callous over the end that had been broken, and a number of fibrous roots on the other end; would they have grown and made *Pæonia* plants?(3)

Fourth, Does the *Convallaria*, or *Lily of the Valley*, have a bulbous or fibrous root? (4)

Fifth, When is the best time to make cuttings of the Perpetual roses? (5)

Sixth, Can Clematis viticella be grown from cuttings? (6)

By answering the above questions you will greatly oblige one who has been a subscriber and reader of the *Monthly*, for four years past.

[1. Evergreen Thorn (*Crataegus pyracantha*) if the seed be sown in spring, will germinate the following year. The best way to propagate it is by layers: if the young shoots are notched in July, and covered with soil, they will root well the same season. The seed will grow in any common garden soil.

2. It may be transplanted either in early winter, or in spring. It is not difficult to grow, but should always be well pruned at transplanting.

3. The pieces of Pæonia roots will remain for years in the condition you name; and curiously enough, will never make plants.

4. Convallarias have fleshy fibrous roots.

5. Just before the wood ripens in fall—about the end of October in this latitude.

6. Cuttings taken off in September, of two eyes or more in length, buried down so that the top eye is above the ground, and protected from being thawed out in winter, by having a little dry litter thrown over, usually root pretty well. One or two out of three generally growing. Florists usually layer them as recommended for Evergreen Thorn.]

GREENHOUSE PLANTS, &c.—*J. A., Paris, C. W.*—"I have a small Greenhouse, where I keep plants for sale. Last spring I bought a *Coleus Verschaffeltii*; in a few days it appeared to damp off in spite of me. I bought another this fall, and it also gave up the ghost! What is the matter?(1)

I bought some Azaleas; they were small ones, then, but they grew 'beautifully less,' until they were almost gone. In the summer I put them out on the north side of a building; but it was all of no use, they are gone!(2)

Where can I purchase some Liquorice root, for planting?(3) Our soil is a good sandy loam; is that suitable? We raise good strawberries, good wheat, barley, and apples, and are beginning to raise good pears. Plums are very uncertain; the curculio destroys the fruit, and black-knot is killing all the trees. Grapes are very uncertain. I have two peach trees, but never get a fruit; the cold winters, I presume, kill the fruit buds. This winter I have wrapped up some of the branches, in hopes that I will preserve them. We begin to look for the *Monthly* as much as for an old friend. A severe

storm of eastern wind and sleet, with rain freezing as it falls, this morning (Dec. 17).'

[1. *Coleus Verschaffeltii* will not live over winter well unless in a house always above 55°.

2. Our friend gives scarcely enough of particulars to enable us to guess what might be the matter. There should be no trouble in growing Azaleas. Possibly he put them from very small pots into very large ones: when, if a heavy rain came on them, the soil would sour and the roots would rot.

3. We do not know. Should be glad for any correspondent to give the desired information.

PEAR SEEDS—*I. H. G.*—"Is it as well to sow Pear seeds in the Fall or early Winter as in the Spring, after the ground has settled?"

[If one can get Pear seed in Fall or early Winter, it would be best to sow it at once; but very little is ever in the market before January. It is best to mix it with slightly damp sand, and keep it cool—sowing as early in spring as possible. Sometimes seed, if it has become somewhat dry, will stay over one season in the ground and germinate finely the following year.]

THREE BEST GRAPES TO PLANT—*C. P., Peru, Ill.*—"Some of the newer grapes 'promise well,' but of the older and proved kinds, Concord, Delaware, and Maxatawny, will, we think, please you. The latter, however, has not yet so 'Union wide' a reputation as the other two.

RASPBERRY—*A 'Subscriber,' Philadelphia.*—"Mr. H. A. Terry, Iowa City, could probably give you the information.

FUCHSIAS FROM SEED—*'Patience,' New York.*—"Asks the best way to proceed to raise Fuchsias from seed. Many kinds are completely barren, and though they produce berries freely, the seed is imperfect, and will not grow. If the seed is good, it should sink in water, if it will not do this, it is worthless, and not worth trying. When you have found a variety that will produce good seed, hybridization will bring on varied progeny; this is nothing more than applying the powdery substance from the stamens of the one flower, to the point or pistil of the one you would save seed from. When the berry is black, the seed should be washed out, and sown immediately. It grows very easily. Any light, sandy soil suits it, covering the seed about one-sixteenth of an inch, and not letting the soil

under any circumstances become dry, or ever very wet. The second year they will bloom.

LIQUORICE ROOTS.—A *Wisconsin Correspondent* asks, where they can be had. We do not find them in any catalogue at our command, and shall be obliged by the information.

Books, Catalogues, &c.

SUPPLEMENT TO GORDON'S PINETUM, London, 1862.

We have only just had an opportunity of examining this work, and after the experience of the "Pinetum," can scarcely say we are disappointed, for, indeed, it is no improvement.

The first thing that strikes the reader unfavorably, is the sneering manner of his notices of his contemporaries: Bridges is merely 'a collector in California.' *Abies Aleoquana* is 'botanical pedantry,' though he says said pedantry is a 'compliment' to Rutherford Alecock, Esq. Something is 'misnamed by one of our great botanical advisers.' Dr. Royle has a 'usually abandoned style.' 'Some person not referred to by name, is 'not over amiable.' Dr. Griffith takes facts on trust; and some other 'drove botany to occupy the low footstool of flattery,'—are specimens of this unfortunate disposition.

Nor are his facts more happy. He tells us the *Sequoia gigantea* is known in American gardens as 'Washingtonia Americana,' which is not a fact. It was never known in any American garden as such, nor in any thing American, but the ignorant letters to the Eastern daily papers of over patriotic Californian trappers. *Sequoia*, he says, is derived from "sequence:" separated,—when every intelligent man now concedes it to be most probably from *Se-quoi-yah*: the great Cherokee chief. The Siberian *Arborvitæ* is turned into a *Syn.* of *Thuja Tartarica*, *Lodd*; but, unfortunately, it prefers to turn itself into *T. occidentalis*, when raised by Americans from seed, too frequently to give honor to the arrangement.

The threadbare story of *Libocedrus Craigeana* being a *Syn.* of *Thuja gigantea* of *Nuttall*, is again rehashed in this work; and Douglass' error about it being found in Nootka Sound, also repeated. *Thuja ericoides*, of gardens, with its two leaved foliage, whatever it may be, cannot be *Retinospora ericoides*, as here stated, which has a trifoliate arrangement.

Rezel's Pines are nearly all wrong, and in this he may be somewhat near right. *Pinus Australis*, he

says, the settlers in the Northern States call Red Pine, and Pitch Pine; when they know nothing of it,—*Australis* being unknown north of the Carolinas. *Thuja japonica*, of gardens, if justly to be classed as a variety of the Chinese *Arborvitæ*, must be a very different plant to the *Thuja japonica* of American gardens. The Black and Red American Spruces are spoken of as distinct species, when they can barely be distinguished as the slightest of varieties. *Abies Mertensiana*, we are told, is found abundantly in the Oregon country, which we should very much doubt, even were there no other error in Gordon. *Abies Pattoni*, with leaves as broad as a Balm of Gilead, we are told is the same as *Williamsoni*, which looks more like a Hemlock Spruce. *Abies Brunonian*, 'is quite hardy,' may deceive American readers: it will be killed easily by 10° below freezing point, according to an American made thermometer.

Independent of these, and many other absolute errors, it is hard to understand what Mr. Gordon means by a species, or by a variety. That it comes 'true from seeds,' would make a White Carrot or Radish a different species from the Red ones,—yet this seems to be the best foundation for many of his divisions. In other cases the differences seem to be in the mere change of expression in the terms he uses. For instance, *Picea grandis*, he tells us, is fearfully mixed up. There appears to be but one original genuine one in England.' The kind generally known as such, different; and proceeding to rename it *P. Lowiana*, he thus describes them:

PICEA GRANDIS.
Leaves arranged horizontally in double rows on each side on short twisted footstalks.
Scales rounded on the exposed part, incurved at the edges, downy externally.
Bractæas hidden by the scales.

PICEA LOWIANA.
Leaves arranged in two horizontal rows on each side, more or less twisted at the base.
Scales rounded on the outside, incurved at the margins, woolly on the exposed parts.
Bractæas dorsally placed at the base of the scales.

and so on. If there be any great difference in these two Pines, so-called, it cannot be made out by the description.

In the matter of synonyms, we should judge our author had been paid by the hundred for hunting them up. Every mistake made by a reputable writer, no matter how evident the mistake may be, is made into a respectable synonym; and the attempts at learnedness made in tenth-rate catalogues, of which probably not one man in ten thousand who reads Gordon's book would ever have heard of otherwise, are duly recorded. Judging by the names, and by the instance of "*Washingtonia Americana*," there is no knowing how many Welsh Cabbage gardens, or Scotch Window sills, are re-

ferred to under the mysterious "*Hort. Brit.*" as authority for the synonyms given; and on the whole, we are sorry to say, that when we looked up the supplement, as we did the original Pinetum, feeling that there was considerable confusion among the Pine tribe; we laid it down with the painful feeling that the confusion was worse confounded, and that Mr. Gordon had better have left it alone.

PROCEEDINGS OF THE PHILADELPHIA ACADEMY OF NATURAL SCIENCES FOR DECEMBER, 1863.

In this issue, our esteemed friend, Mr. Durand, has a paper on the "American Tea Plant," (*Ceanothus americanus*), going to prove that it is not the Chinese Tea Plant (*Thea viridis*). We are not sure that such papers do credit to the proceedings of such a distinguished society. It seems like a scientific argument on the question whether the "moon is made of green cheese." Imagine the Linnæan Society of London publishing a memoir to prove that the Orange does not grow wild on the Yorkshire hills; or, the French Academy, that the Pine-apple is not found wild on the mountains of Normandy. As a very valuable essay, tending to disabuse the public mind, of what we regard as little less than a bold attempt at fraud, it would have been in place in the public prints,—but not at all so, to our mind, in these transactions.

CATALOGUES.

George Baker, Toledo, O. Descriptive Catalogue of 68 pages.

Peter Henderson, Jersey City, N. J. Spring Catalogue of New Plants,

Francis Parkman, Boston, Mass. Hardy Ornamental Plants; one of the most interesting we have seen.

John Saul, Washington, D. C. Fruit, Evergreens, &c., wholesale.

Lindley & Hinks, Bridgeport, Ct. Selected list.

W. Patrick, Terre Haute, Ind. Fruit and Ornamentals.

J. M. Price, Wallingford, Pa. Fruit and Ornamentals.

Prince & Co., Flushing. Herbaceous Pæonies.

C. F. Erhard, Ravenswood, L. I. Wholesale list.

J. Best, Utica, N. Y. Small Fruits.

Kenton & Mercer, Harrison, N. J. Fruits, &c.

I. H. Adams, Middletown, Ind. Fruits, &c.

E. A. Bauman, Morrisania, N. Y. Trees, Shrubs, &c.

J. M. Thorburn & Co., New York. Spring list of Seeds, &c.

Landreth & Son, Philadelphia. Rural Register for 1864.

Buist & Son, Philadelphia. Almanac and Guide Book.

H. A. Dreer, Philadelphia. Vegetable and Field Seeds.

New or Rare Plants.

NEW PYRETHRUMS.—Those of our readers who seek amusement or instruction in our advertising columns, will doubtless have observed a few weeks since, the announcement, by Mr. Salter, of an Exhibition of PYRETHRUMS. The race of Pyrethrums to which this announcement referred, and which comes from the stock indifferently called Pyrethrum Carneum or roseum, is a new garden flower, which promises to rival, if it does not excel, such subjects as the Phlox and the Pentstemon, having moreover the advantage of blooming at an earlier period.

The parent plant is tolerably well-known as a hardy herbaceous perennial, with finely cut almost fern-like leaves, and large daisy-shaped flower-heads with a broad spreading ray of pale pink or rose color. That it should have given rise to a new race of ornamental border plants with "double" flowers no one would have dreamed a few years since; and yet as its sisters, the Chrysanthemum and the Feverfew, have shown themselves to be sportive maidens, ever and anon putting on double faces, it is not to be much wondered at that Sister Carneum should follow in their wake.

The first change—a sport in color—as we learn from Mr. Salter, took place about 1853; and for following this, us cultivators are indebted to the indefatigable hybridizer, the late M. Themistère. In 1858 the first semi-double Anemone-flowered variety was obtained, since which the progress has been so rapid that at the present time, what with singles, semi-doubles, reflexed doubles, and Anemones, there are something like fifty or sixty named varieties, among which there occurs a considerable amount of diversity of color. Here then is a new subject rapidly developing into what is called a florist's flower.

This being so, it behooves us, while the character of the flower is, as it were, being moulded to our desires, to determine what is the most perfect character that can be given to it. It seems to us that the nearly-related show. Chrysanthemum will afford the requisite model. Setting aside the mere singles and demi-doubles as border

flowers—and very showy border flowers too they are—we have remaining the Anemones and reflexed doubles as the highest points severally attained in two different directions. From these must be moulded more perfect Anemones and more perfect doubles, the latter being the more important class of the two. At present this latter group yields us only varieties with reflexed florets. We must go on seeding and selecting from these till we get the florets arranged with perfect regularity, and the flower heads nearly globular in form, not less than two-thirds of a ball being accepted as perfection. From these in due time we shall no doubt obtain sports with incurved florets, and then these must be seeded, selected and perfected in the same way. So will these Pyrethrums, viewed as florist's flowers, be rapidly converted into an interesting and novel group of early summer-blooming pet plants.

But they are not flowers for florists only. They are gay, showy, ornamental subjects for the garden, flowering abundantly from the middle of May to the end of June, and again less vigorously from side shoots in August and September. It so happens that the singles and semi-doubles, from being taller in growth are the more suitable for the least pretentious positions, as shrubbery borders and such-like places, while the choicer double sorts are better fitted for beds and the more dressy parts of the garden. The average height of the double varieties is from twelve to eighteen inches, that of the single kinds a couple of feet.

This showy Pyrethrum has one especial good quality, namely, that it will flourish almost anywhere. For high cultivation, however, the most suitable treatment is to plant them in good rich loamy earth, in an open situation; and being herbaceous they can be propagated with every facility by division. This, according to Mr. Salter's experience, is best done in February or March, though it may be effected in July after the first flowering is over. Seeds may be sown either in August or in early spring, and the seedlings, if duly encouraged, generally flower the first year.

In order to give our readers some idea of the nature and extent of the materials which are at present available, we append the following list of the better sorts, which as been kindly handed to us by Mr. Salter, by whom those marked (S) have been raised:

DOUBLE VARIETIES.

Album plenum, white; Boule Rose, rosy blush; Candidum plenum, white; Carneum plenum, blush; Charles Baltet, bright rose; Comte de

Montbrun, rosy lilac; Delicatum, (S) French white; Floribundum plenum, bright rose; Fulgens plenisimum, dark red; Galathée, light rose; Gustave Heitz, bronzy rose; Hendersonii, dark red; Herman Stenger, rose, ranunculus-formed; Iveryannum (S) very large rosy red, ranunculus-formed; Lysias, (S) dark rosy red, Madame Fourcade, white; M. Bonamy, creamy white; Mr. Dix, (S) bright rose, very large; Mrs. Dix, (S) blush white; Pink Pet, rose pink; Princess Alexandra, (S) large pure white; Purple Prince, (S) dark red purple; Purpureum plenum, red purple; Roseum album, (S) rose, with white centre; Roseum plenum, rose lilac; Striatum plenum, (S) rose, flaked with white; Themis, rose carmine; Thomas Massart, rosy buff; Versailles Defiance, (S) rose, ranunculus-formed; Vilmorin, rose; Wilhelm Kramper, rose, ranunculus-formed.

SINGLE VARIETIES.

Duchesse de Brabant, rose; Gloire de Nimy, red; Kleinholtz, crimson; Milleri, peach; Prince Alfred, (S) bright red, very large; Princesse Charlotte, rosy red; Tom Pouce, red, very dwarf.

Even ordinary mixtures of this flower, such as may be obtained from sowing a packet of mixed seeds, produce beds of very gay looking flowers, as we have on more than one occasion witnessed during the present season. We may also mention that a group of some of the earlier varieties of these Pyrethrums will be found in the *Illustrated Bouquet*.—*Gardener's Chronicle*.

VARIEGATED HEMLOCK.—In a hedge of Hemlocks on the grounds of Dr. E. S. Kelley, at Newburyport, Mass., is a variety with beautiful silvery, variegated leaves. If it could be propagated and disseminated, it would be a very handsome addition to our ornamental grounds.

CHRYSANTHEMUM CORONARIUM, DWARF YELLOW.—This new variety is of a low habit, forming a thick, branchy bush, about 15 inches high, on 20 to 24 inches in diameter, and produces on this reduced space about as many flowers as the old variety on its much larger plants. As a bedding and border plant, this new Chrysanthemum will soon be a favorite, and reconquer the place which the tall variety seems to have been obliged to give up to other plants, more in consequence of its ancientness than for the superiority of the merits of its younger competitors.

ABIES BRIDGEL.—A correspondent of the *London Gardener's Chronicle*, writing from the Pacific

coast, says:—"In the course of the day, I made a very agreeable discovery in the examination of what I thought the *Abies canadensis* of the Atlantic slope; but which I found represented by a species which may be little known in England. It has only been recently described by my friend Dr. Albert Kellogg, Secretary of the Californian Academy, in their Transactions, vol. ii., p. 8, under the name of *Abies Bridgei*. I will send you plenty of it later in the season. It is a tree 80 to 100 feet in height, of dark verdure and graceful appearance. The branchlets are very villous, slender and drooping. The timber is said to be firmer, finer, and straighter-grained than the Canadian Hemlock Spruce, which it represents on the Pacific coast. It is certainly closely allied to *A. canadensis*, but I believe, with Kellogg, that it is distinct. Even the Canadian woodsmen, who are very apt to forget that similarity is not identity, and apply 'old country' names to any thing at all resembling what they are familiar with in Canada or Maine, recognize it."

HELIPTERUM SANFORDII.—A very pretty dwarf, tufted, bright yellow Everlasting, quite distinct from any other in gardens, and of easy management.

GODETIA RUBICUNDA SPLENDENS.—The *Godezia rubicunda* is one of our best annuals and a general favorite with amateurs of fine flowers. The new variety differs from its senior by its purple stain in the centre, which is larger and of a much brighter color, being thus more showy and producing a much greater effect.

We do not doubt that the new variety which has proved during two years' cultivation quite permanent, will supersede the old as soon as it is sufficiently known.

ROSE MRS. WILLIAM PAUL.—Was raised by M. Verdier, is one of the finest of the present year; a thick-petaled cupped flower, of an intensely deep shaded crimson, with fiery scarlet in the centre; radiant and beautiful as Mr. Radelyffe puts it.

MICROSTYLIS DISCOLOR.—A terrestrial Cinghalese orchid, with short stems, each bearing about four ovate oblong leaves of a rich purple, sometimes edged with green, plaited longitudinally, and much crisped at the margin; the minute flowers in a narrow spike, yellow, changing in age to deep orange. Sir W. Hooker observes that it may be reckoned among the most lovely of terrestrial orchids, ranking with *Anacetocheilus setaceus*; but,

though having handsome leaves, and contrasting well with the *Anacetocheilus*, it can hardly be considered as equalling them in beauty.

SPILÆRALCEA ACERIFOLIA.—A sub-shrubby Malvaceous plant, apparently of moderate stature, having cordate five or seven-lobed leaves, and numerous flowers of a delicate rose color, crowded along the upper part of the stems; it is a rather showy plant, and probably hardy, being found in British Columbia, and the north-western regions of America.

ERANTHEMUM TUBERCULATUM.—A 'very floribund,' slender branched shrub of dwarf bushy habit, having small opposite broadly elliptic or obovate obtuse leaves, tuberculated branches, and very copious white flowers with a long slender tube, and a five-lobed spreading somewhat two-lipped limb; it is an Australasian plant, introduced by Sir Daniel Cooper, and recently flowered by Mr. Veitch.

HIBISCUS HUEGELII QUINQUEVULNERA.—A handsome Swan River shrub, of erect habit, with deeply five-lobed leaves, having the segments also deeply sinuato-lobate, and large rosy flowers, like those of an *Althea frutex*, each petal being marked at its base by a deep blood-red spot. *H. Wrayæ*, and *H. grossulariæfolius* are now considered mere forms of *H. Huegelii*.

CEROPEGIA BOWKERI.—A very singular Caffrarian Asclepiadaceous plant, with a depressed globose tuber, and a few erect simple stems, with narrow linear leaves, bearing in the upper axils solitary flowers, of remarkable form and color, the corolla tube being cylindrical, dilated and globose at the base and summit, and its segments, linear-oblong, narrow at the base, fringed at the margin, yellow with green blotches, and remarkably reflexed so as almost to hide the greater part of the tube, but exposing its brown-stained bluntly five-spurred orifice.

Foreign Intelligence.

LIFTING THE ROOTS OF VINES AND RENEWING THE BORDER.—When this operation is commenced, its completion should be accomplished with as little delay as possible. It is, therefore, necessary to have in readiness, before the old border is interfered with, the amount of material that shall be needed for drainage and for the for-

mation of the new border. When the subsoil is clay, it is always advisable to concrete the bottom before the draining material is laid on, and gravel and lime should be included in the mixture. A main drain should run parallel with and at the extreme front of the border, and cross drains from the front of the vinery should run into the main drain at intervals of 6 feet, and, of course, a good outlet should be secured for the whole. Four-inch-tile drains will be sufficient. These, with as many brickbats or small stones as will form a layer one foot deep all over the bottom, and a few barrow-loads of coarse gravel with the sand sifted out of it, to blend with the brickbats or stones, will be all that is required for the formation of the site on which the border is to rest.

The border itself, to be what is considered of first-rate quality, should consist of friable turfy loam taken from an old pasture to the depth of 4 inches, herbage included. To eight cartloads of loam add two of mortar rubbish, one of horse-droppings, and 4 cwt. of inch bones. As our correspondent, 'C. V.' has charcoal at command, he may substitute it for the mortar rubbish, or a cartload of each may be added instead of the two of mortar alone. The loam should be chopped up with a spade, and the whole thoroughly mixed together and protected from rain in a place close at hand till it be required.

Though such a compost as this is recommended, I am far from desiring to lead the inexperienced to suppose that grape-growing is not to be attempted, or that the roots of vines are to be left undisturbed in cold, wet borders till they can command such a border to the very letter as has been described. The nearer they approach to it, however, the better. If, for instance, the loam at command is heavier than that which deserves the name of friable or turfy, then more mortar rubbish or charcoal, or both, should be applied; and when the two latter cannot be had, a third of the soil itself may be charred, or even burned, an expedient which I have frequently had to adopt myself. Even where nothing in the shape of turf from an old pasture can be had, very good grapes can be grown with moderately light common garden soil having the same amount of the other ingredients mixed with it, or more or less of them, just in proportion as the soil is stiff and likely to become consolidated, or the reverse. Any composition that is free and open, and moderately enriched with manure, produces very good grapes, and no discouragement should be thrown in the way of any one who can form his border of such, when that which

is considered best cannot be more closely imitated. An amateur friend near here has done wonders with a border of little more than black sand close to the sea. Too much water about the roots was next to impossible, from the nature of the soil, and the secret of his success lay mainly in rich top-dressing.

Supposing, then, that the time for lifting the vines has arrived, which, as has already been stated, in the case of vines that can be cleared of their crop before they become dormant, is early in autumn. But when the reverse of this is the case, and the crop is a late one, the operation is to be performed in spring in preference to winter. In as far as the operation of lifting the roots is concerned, the time of doing it makes no difference, although in several points the after treatment required at the different seasons varies considerably, and will, therefore, be separately referred to.

The first thing that must be done is to remove the whole of the inert surface soil down to the roots of the vines. Then a trench should be taken out along the front of the border deep enough to be below the roots. The removal of the whole soil should then be effected with as little injury to the roots as possible. Every rootlet that can be saved will contribute its own share toward the success that is to follow. After the trench is opened, the soil must be gradually and carefully worked away from the face, and the trench should be constantly cleared of the loose soil. There are no better tools for this purpose than a four-pronged steel fork, and a sharp-pointed piece of hardwood stake. Any attempt that may be made to hurry forward such an operation as this is sure to be attended with a corresponding injury to the roots. No large slices of the border must be taken off at a time, but it must be gradually picked, forked, and crumbled away. Yet the operation should be completed as quickly as it can be done, so that the roots should be as short a time as possible out of the ground. Therefore, as many hands as can work without being in each other's way should be employed.

As soon as the roots are all liberated, they should be covered up carefully with damp moss and mats, to prevent their suffering from the weather, till the new border is ready for them.

[To be continued.]

EARLY FLOWERING ANNUALS.—Sweet Alyssum, Campanula Lorei, Clarkia pulchella var. Tom Thumb, C. alba, Gilia bicolor and tricolor, Eucharidium grandiflorum, Gypsophila muralis, Collinsia atrorubens, bicolor, bartsieifolia and bartsieifolia

alba, Escholtzia Californica, and crocea alba, Silene pendula and alba, Limnanthe grandiflora and alba, Lupinus nanus and nanus alba, Nemophila insignis maculata, Nolana atriplicifolia, alba and paradoxa, Venus' Looking-glass, Leptosiphon aureus and densiflorus, Candytuft, and Erysimum Peroffskianum. These, with many more, bloom early. March is the best time to move them, though we have found very little difference between those moved in October or the beginning of November, and those transplanted in March. The grand secret is to lift them with balls, and to disturb the roots as little as possible. All transplant well with balls of earth attached to them.—*Cottage Gardener*.

THE TREE CARNATION.—The cultivation required to have the tree Carnation in perfection must be, of course, different from that ordinarily pursued with the florists' varieties. They ought not to be allowed to flower the first year; but when the plants are received from the nursery, they should be at once, if well rooted, placed in the blooming-pots. These should be about 6 or eight inches in diameter. The tops should be pinched off in order to encourage them to throw out shoots; but, at the same time, no shoots should be allowed to come out low down the stem, the growth being encouraged on the head of the plant, while no flower stems should be allowed to rise. They may be placed during the spring and summer months in a cool and airy situation, and when they have obtained their growth, may be placed out of doors, but sheltered from very heavy rains, which are always injurious to plants in pots: they will then form their flower-stems and bloom buds. Water should be carefully applied, the plants never being allowed to flag; and then, when there is appearance of frost—say in October, they should be brought into the house.

The soil in which they delight is a rich and friable one, but not too much manured, as this is apt to cause the color to run. Loam about one-half, leaf mould and old manures one-fourth each, with the addition of some sand, form a very excellent mixture, in which they will be sure to thrive.—*Id.*

HOLLIES FROM SEED.—Hollies are usually raised from berries; They are kept in the rot-heap for a year, then sown in beds of rich sandy loam. They also come from cuttings, but are difficult to strike, and need five years' growth to make plants of them. Rhododendrons may be increased by seed, layers, and cuttings. In the month of May, scoop out a little hollow under a branch suitably placed for lay-

ering, and fill it with sandy peat or half-rotted moss well chopped up with silver-sand, bend the joint down, fix it with a hooked stake, so that there will be no fighting with it after the branch is cut. Then loosen it from the peg, and with a sharp knife cut half through the stem and upwards an inch and a half toward the top of the shoot, taking care to leave sufficient wood and bark on the side not cut to maintain the branch in health. Insert a small pebble or slip of wood to keep the incision open; bend a branch down again, and bring the head of it upright or nearly so, without breaking it at the cut part, and fix it firmly under the hook to the stake. Press the peat firmly about the tongue, and lay a bunch of moss over, with a stone or tile to prevent it being blown away, and leave the rest to nature. The branch will not be sufficiently rooted for removal for a year, when it may be cut away and carefully planted, with others similarly treated, in a nursery-bed of peat, and well supplied with water.—*Gardeners Weekly*.

THE RUSSIAN VIOLET.—To those who have to furnish a boudoir or drawing-room with scented flowers during the dull months of November and December, this kind of Violet is invaluable. Managed in the way I describe, it flowers here more or less the whole year round. In May I prepare a piece of ground for it at the foot of a south wall; I take off all the strongest runners and plant them in rows 15 inches apart and about 10 inches asunder in the row; I prepare a compost consisting of equal parts of sand, loam, and well rotted leaf-mould, and in this I plant the runners. No more attention is required except shading them for a few days until they become rooted; should the summer prove dry, they will be benefited by copious watering, and if the weather should be boisterous and wet in October, an old spare light may be put over them, tilting it on bricks at the corners. This will prevent the blooms from being damaged.—*Gard. Chronicle*.

RHODODENDRON SEED.—Sow in February, in shallow pans, in sandy peat, on a moist dunghill. Keep close till large enough to handle; then prick them out, three or four round the sides of five-inch pots, in similar soil, and keep close and warm till they start again. As they begin to touch each other, pot them singly, and give greenhouse culture till the next spring, when they should be put out in a shady place till October, and then wintered in pits, till large enough to plant in nursery rows for blooming.

PENNSYLVANIA HORT. SOCIETY.

MONTHLY DISPLAY, DECEMBER 8TH, 1863.

It is pleasant to record the increasing attention given to tasteful arrangement in making up bouquets and baskets of cut flowers. The first premium Table Design, from F. O'Keefe, gardener to Mr. Jos. Harrison, was very commendable. W. Joyce, gardener to ex-President Baldwin, obtained the first premium for Basket of Cut Flowers. The best Hand Bouquets, E. Satterthwait. Best Hanging Basket, from Mr. Harrison's gardener. Some splendid pots of *Annothchilus*, a premium of one dollar to the same. T. Meghran, gardener to Girard College, had a special premium for a fine Basket of Cut Flowers, and another special premium for a yellow-fruited Egg-plant, in a pot, which the committee thought very ornamental.

The Fruit Committee reported: First premium for Foreign Grapes, 3 bunches, to W. Joyce, gardener to M. W. Baldwin—Palestine variety; the only ones on exhibition. Best 6 varieties of Pears, J. McLaughlin, gardener to I. B. Baxter—they were Reading, Niles, Solda, Labreur, Belle Angevine, Triomphe de Jodoigne, Winter Bon Chretien. Apples, best 12 varieties, to S. W. Noble—they were Forniwalder, Northern Spy, Baldwin, Ridge Pippin, Smith's Cider, Autumn Pearmain, Jonathan, Rawle's Janet, Pennock, Michael Henry Pippin, Cooper's Redling, Roxbury Russet. The committee especially noticed a fine dish of Glout Morceau pears, from A. L. Felten, and a special premium of \$2 to Mr. Baldwin's gardener, for some splendid Pine-apples.

The Vegetable Committee awarded the first premium for Celery to T. Meghran, gardener to Girard College; and for the best 6 heads of Winter Lettuce, to W. Joyce, gardener to Mr. Baldwin, and a special premium of \$5 to A. L. Felten, for a splendid collection of very fine vegetables.

DISCUSSIONAL MEETING, JANUARY 5, 1864.

Mr. Charles V. Hagner in the chair.

Mr. Walter Elder presented the following essay on "FRUITS ALL THE YEAR ROUND."

The first garden I worked in was a Fruit Market garden, and a succession was kept up all the year round. Strawberries were first, beginning with the *Virginia Scarlet*, and ending with *Hautbois*; taking two months. Gooseberries followed, beginning with *Green Gaston*, and ending with *Red Warrington*; lasting two months. Raspberries of the various *canes* and *Antwerps*, lasted six weeks. Cherries, beginning with *May Duke* and ending

with *English Morello*, lasted two months. Apples began in June, with a small, sweet-scented yellow, which I cannot now name, and ended with *Gagar Pippin*, which was picked in December, and kept until the following August; with the various Codlins, Pippins, etc., a constant succession was kept up. Pears began with *Green Chisel*, in July, and ended with *Moor-fowl Egg* and *Swan Egg*; gathered late in November and kept until Green Chisel ripened the following year; the various collections kept up a continual succession.

The winter keeping apples and pears were packed in boxes, such as are used for packing soap and candles; no box held over a bushel. The boxes were lined in the bottoms and sides with soft meadow hay, well dried. A layer of fruit was alternated with a thin layer of hay, and covered on top with hay. Three days after packing, the tops of the boxes were screwed on, and they were placed above each other,—each variety of fruit by itself. None of the boxes were over a foot deep; they were kept in second story rooms, without fire, but frost never reached them; the walls were two feet, of stone. None of the boxes touched the walls, but were placed three inches off, so as to guard against dampness. When the boxes were opened to examine the fruits before sending them to the Fruiterer's, it was very rare that a rotten one was found: the dry hay absorbed all sweat and moisture which the fruits gave out, without becoming damp itself.

I will now tell you what I have done, and what I know that several others have done. With three glass graperies we have produced ripe foreign grapes eight months in the year. Set the first house to work early in January, and by good management grapes are ripe in April; and a various collection will continue to ripen for ten weeks. The second house, set to work the middle of March, will come in to succeed the first. The third, or cold grapery, will succeed the second, and will continue with ripe fruit until Christmas. These grapes, grown in the confined and moist air of glass houses, will not keep long after being gathered; but if large ventilation is given, and the air is kept from the time the fruit is half colored, and the fruit is gathered a week before it is ripe, or when it begins to shrivel, and packed in shallow boxes with soft hay or even dried bran, or any other material that will absorb all the moisture the fruits give off, they will keep sound several months; and in this way grapes can be had 'all the year round.'

Next, in the forcing department, is the *Orchard House*, with a well selected collection of varieties and good management, tree fruits are produced for

three months in succession; and these being succeeded with tree fruits grown in the open ground, fresh picked fruits are had eight months in the year. I am an advocate for growing all the trees in pots in Orchard Houses, as they can be carried out when the weather gets warm, to ripen their fruits or mature and harden their wood. Apricots, Peaches, and Nectarines are the best kinds to force; and these are much grown on inside borders of shed-roofed graperies, and trained upon the back walls. The varieties of apricots and nectarines are not numerous, but peaches are of many varieties; we may begin with the *Early York*, and end with *Late Heath*, and the other varieties succeeding each other between them, a long succession is obtained without extra care.

The Pinery comes next, and ripens its fruits in long succession; and no kinds of fruit are more delightful. The Pinery needs a great quantity of fuel, as the temperature must be kept high to insure success; the fruit is more costly on that account. The Pine-apple is the golden-cased jewel among fruits.

Strawberries may be had ripe a month before their natural time, by setting them a foot apart in beds five or six feet broad in spring, and let the runners make all the plants they can; keep them free of weeds, and in November set shallow hotbed frames upon the beds; sink them a few inches in the ground, and bank up the outside a few inches, so as to keep off cold bottom air. In December cover the plants with tree leaves or clean straw, three inches thick. Do not cover them with hay, as it contains many seeds of weeds. In March remove the covering, and put glass sashes upon the frames, and give air on warm days, the same as with hotbeds. Pull out all weeds as they appear, and the fruit will be ripe a month earlier than its kind out-doors. Three frames, of three sashes each, six feet long and forty inches wide, with a different variety in each frame, to succeed each other, they will produce ripe fruit until those in the open garden come on to succeed them. (The treatment will also produce early asparagus.) Melons can be had ripe the year round in hotbeds; but it needs a skillful gardener to grow them in winter.

Let us now attend to hardy fruits, grown in the open ground. The Strawberry takes the lead for earliness. Plant four or six varieties, from earliest to latest, and a succession will be long kept up; or, where one or two varieties only are grown, plant a portion of them in a warm sunny place, and another portion in a cool place.

The Raspberry comes next, and the many choice

varieties, ripening at different times, keep a long succession. Plant four kinds to succeed each other; or, grow the same kinds in warm and cold spots, as in that way the same variety will keep up a succession a fortnight longer.

Gooseberries and Blackberries may also be had in succession. The surest plan, and that which gives least trouble to keep up a long succession of any one kind of fruit, is to grow several varieties that will naturally succeed each other.

The Currant has but few varieties, and to have a long succession of ripe fruit, plant some in a warm, sunny spot, and others in a cool, partially shaded one, and the latter will succeed the former.

Of Native Grapes there are many varieties, some a month earlier than others. Plant several varieties, from earliest to latest, to succeed each other. The fruit ripened in dry seasons will keep some months if packed in the manner we have advised for foreign grapes.

Of tree fruits, Cherries come first, and there are many varieties that ripen at different times, beginning with *May Duke*, and ending with *English Morello*, which give a succession of from six to eight weeks.

Apricots, during July and August; Peaches, from August to December, and Plums in their season, for from two to three months, give an abundant succession of the most delicious fruit.

The Apple has such a multiplicity of varieties that ripe fruit can be taken off the trees from July to December, and many of the winter kinds keep sound till apples come again: *Early Harvest* ripens in July, and the green *Newtown Pippin* will keep sound until the former comes again.

The Pear, with its multitude of varieties, gives us ripe fruit 'all the year round.' Like the apple, we can pick ripe fruit off the trees from July until December; and the fruit keeps sound till pears ripen again. There is no fruit, of our climate, so delicious as a real well-ripened pear; and a dozen varieties will give us ripe fruit twelve months. *Bloodgood* is one of the earliest, and *Winter Nelis* one of the latest.

Nuts are not so much cultivated as they should be. Filberts are among the earliest. Chestnuts, Walnuts, Butter Nuts, Shellbarks, Beechnuts, &c., are all good fruits, and the trees are all ornamental; indeed the gathering and husking of the various nuts, forms a mirthful amusement.

In the keeping of fruits, we should study the philosophy of their ripening. After being formed, they continue increasing their size, until they lose the power of extension—when a change takes place

in their constituents. While increasing in size, their constituents are all air, water and fibre. Unpleasant to the taste and unwholesome to eat. But when they lose the power of enlargement, wood and sugar form an increase, and so corrode the other matter as to make them delicious and wholesome. Wood hardens and matures the seed, while sugar gives sweetness and mellowness to the pulp, until the fruit is ripe. While the change is going on, the fruit is constantly evaporating (giving out moisture) and the plant continues supplying it with sap, to keep up its natural moisture until it is ripe, and if left upon the plant after that, it loses moisture by evaporation, and becomes dry and mealy. But if picked before it is fully ripe, and packed closely from the effects of light and air, it ceases to evaporate in a few days, and retains its natural juiciness. Sugar increases a little longer, and the fruit becomes sweeter and better flavored, than if left to ripen upon the plant. Of course, the process is slower in hard fruit, and quicker in soft watery fruits. But the cooler the temperature, in which the fruit is kept, the longer they will keep from decay; but they should never get frosted, and should never get damp. But the failures in keeping apples and pears, may be as much owing to the state of the fruit when gathered, as in wrong packing or improper temperatures. Pick the fruit before they are ripe, pack so as to exclude light and air. Keep cool, but free from frost and damp.

The hinderances to a continued succession of tree fruit and grapes, may be briefly summed up in this way. Where the plants are growing, they are continually evaporating; and while the soil is moist, the roots not only supply the evaporation, but enlarge the fruit, and make new shoots also. But during a long drought in hot weather, the evaporation from both plants and soil is excessive, the roots cannot get moisture to supply the evaporation of the plants, and vegetation stops. Grapes mould or shrivel, plums rot, pears crack and apples are small. If a spell of wet, warm weather succeeds a drought, the plants revive and take up much moisture, part of which, goes into the fruit, just when woody and sugary matters have half done their maturing work, and causes a derangement. Grapes continue green, and so do the young shoots of the vines. The grapes never color, and are destitute of sweetness and flavor. Apples and pears begin to rot first at the core, and the decomposition sooner or later consumes the whole fruit. When they become a mass of corruption, and much of the fruit appear sound, outwardly, to the last: such fruit would not long keep up a succession. I have

always observed, that trees and vines growing upon sod, were less affected by a wet spell, and their fruit less injured, than when growing upon cultivated lands. The reason I attribute that to is, the grass takes the first benefit of the rains, and the trees and vines get less, and a reaction in growth is slower; and even in droughts, the grass greatly retards evaporation of moisture from the soil, and has a strong attraction for night dews. Trees and vines growing upon rolling lands are seldom affected injuriously by a wet spell; and, again, fruit trees and vines, sheltered by belts and groves of forest trees, are less injuriously affected by droughts, as the drying winds are tamed before they reach them, and evaporation is less excessive, and night dews fall heavier in the shelter. Underdraining flat, cohesive soil, has also a beneficial effect on fruits.

I had almost neglected to state, that without the proper application of the Science of Pruning, tree fruits and grapes of really good qualities cannot be obtained. Some persons carefully prepare their soils by deep tillage and manures, and purchase the choicest varieties of fruit, have them skillfully planted and otherwise cared for; but they think no knowledge is needed to cut off the branch of a tree or a shoot of a vine; so with knife and saw they do it themselves, or get inexperienced persons to do it, and never see until it is too late, that they have been doing an irreparable injury.

The discussion which followed turned mainly on the preservation and ripening of fruits.

The Chairman had preserved Isabella grapes in the saw-dust used in packing Malaga grapes, and always with success. Packed in bran they spoiled in ten days. The particles of flour in the bran excite fermentation.

Mr. Harrison—Has tried various substances for keeping fruits, such as saw-dust, bran, sand, charcoal, chaff, &c. *All absorbent* materials are worthless for the purpose. Pine saw-dust communicates a smell and taste of turpentine; that of mahogany is the least objectionable. Cork dust is the best possible material, being dry, non-absorbent and not fermentable.

Mr. Schaffer—A friend packed his crop of Lawrence pears in wheat chaff last winter and lost them all. This year put them in barrels with no packing material whatever, and they have kept well.

Mr. Hays—At the north grapes are packed between layers of paper and kept till March.

Mr. Schaffer differed from the Essayist as to picking fruit before it is ripe. Thinks most kinds of pears should ripen on the tree.

Mr. Satterthwait—The Bloodgood is by no means the earliest, nor is the Winter Nelis the latest pear. The use of bran for packing fruit is not advisable. Has come to the conclusion that most pears ripen on the tree.

Mr. Harrison—The maturity and ripening of fruits are not synonymous terms. The latter is the first stage of decay. Most pears, well matured on the tree, ripen best in the house, yet there is a great difference in this respect. The Seckel ripens best on the tree, the Des Nonnes equally well on the tree, or house ripened, the d'Arenberg and all winter pears, indeed all astringent pears, must be ripened in the house.

Mr. Satterthwait—What advantage is there in packing material? It is only necessary to keep fruits dry and cool. Grapes might require a layer of paper.

Mr. Harrison—Perishable fruits require some material to pack in for transportation long distances. For ripening them none is required.

Mr. Schaffer—The very best way, is to pack them in barrels, fruit in contact with fruit. They keep better thus, and retain a higher flavor.

Mr. Meghran described a method of pitting fruits in the open ground. A hole was dug, a large flower pot put in the bottom, the fruit placed in it, surrounded with hay, and a stove pipe three feet below ground, and one foot above, for ventilation. This was closed in very cold weather. Easter Beurré pears thus treated kept until April.

Mr. Satterthwait—Here is danger of mice harboring in the hay and destroying the fruit. If earth be put in contact with it, an earthy flavor is imparted.

Mr. Hays—The Essayist speaks of draught as injurious to fruits. Now in my experience, the drier the season the better for grapes. The finest I ever saw were grown in a very dry season, and never found any of them to wilt. Deep culture and good preparation of the soil is all important.

Mr. Satterthwait—Drought, except in the case of young trees or vines, does not effect the fruit injuriously.

The Chairman—In the cholera season of 1832, a gentleman of Norfolk, Va., had a fine crop of Isabella grapes, which he removed from the vines and buried in the ground, fearing to let them be eaten. In the Spring they were exhumed perfectly sound.

Mr. Satterthwait—Apples keep in the ground, like turnips, but have a slightly earthy taste. What is wanted, to preserve fruit, is a dry place, free from draughts of air, and a cool equal temperature.

Mr. Harrison—A fruit-grower near Harrisburg, who sends tons of Isabella grapes to Baltimore in winter, showed me samples at the meeting of the Fruit-Growers' Society, in February last. When perfectly ripe, the bunches are laid upon a board in a cool and airy shed until entirely dry, then packed in paper boxes in two layers with paper between.

Mr. Satterthwait—It is very important that the fruit be perfect as well as ripe; all green besides should be removed from the bunch.

Mr. Schaffer—Last year packed some of my fruit in leaves on the ground, well protected from the frost; they kept and ripened well. Last October received from Mr. Satterthwait some Easter Beurré pears, and packed them in the same way. They are still green and hard. Keep all my winter fruit out till hard frost, then house it.

Mr. Satterthwait—Last fall found some Belle Lucrative on the ground, covered by rhubarb leaves, a month after the others were gone, which ripened well. Fruits can be hastened or retarded in ripening by a change of temperature.

Mr. Harrison—Pears forced in ripening are often mealy and tasteless. Each fruit has its natural season, and this it should be allowed to attain.

Mr. Satterthwait—What is the natural season of a fruit? My pears ripen much earlier than Mr. Schaffer's. Most of the winter pears ripen very early in a cold closet, where the temperature averages about 50°. All of the fruit is from very young trees. The Vicar proves worthless as a dessert pear.

Mr. Pettit presented very handsome specimens of the Niles pear, which had been kept on matting in a cool dark closet, where they ripen until February. These were grown upon the original tree, now standing in his yard, No. 1518 Chestnut St. The fruit was large, fair, bright lemon yellow, sweet and excellent. Being gathered rather too early they were somewhat withered, and not as juicy and tender as when allowed to mature thoroughly on the tree.

HAMPDEN CO. HORTICULTURAL SOCIETY.

At the Third Annual Meeting, held at Springfield, Mass., the 19th ult., the following officers were elected for the ensuing year:

President—J. B. Stebbins, Springfield.

Vice-Presidents—Dr. T. L. Chapman, Longmeadow; Geo. E. Howard and W. L. Smith, Springfield.

Secretary—J. E. Taylor, Springfield.

Treasurer—Gurdon Bill, Springfield.

THE GARDENER'S MONTHLY.

DEVOTED TO

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THOMAS MEEHAN, EDITOR.
W. G. P. BRINCKLOE, PUBLISHER.

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Hints for March.



FLOWER-GARDEN AND PLEASURE-GROUND.

As soon as the frost is thoroughly out of the ground, and while the surface is yet soft, lawns should have a thorough rolling, which will not only tend to level the surface, but also press into the earth the roots of any finer grasses that the frost may have drawn out. Lawns frequently become coarse, by this operation of the winter season. If the grass is poor and thin, a top-dressing of guano and salt may be applied before the rolling. Stable manure injures fine lawns by introducing coarse weeds. Soot or wood-ashes are excellent for giving lawns a fine green color. In making new lawns a deep soil is very important. In shallow soils the soil soon dries in hot summers, and the lawn becomes brown when its green is the most desirable.

The edges of walks, beds and borders, should have their annual edging—not cut deeply down like a wall, but as neatly and shallow as possible; a good eye is necessary to avoid harsh lines; and a very sharp spade, or what is better, an edging iron made for the purpose, employed. Walks should be forked up with a drag or fork hoe, and an additional fine coat put on the gravel where needed, and then rolled over. The wetter the gravel, the better for the rolling operation, provided it is not wet enough to adhere to the roller. It is bad policy to have more than half an inch of sand on the stone bed of a carriage road, as it cuts in too deeply in wet or thawing weather. In foot walks it is not so important, as the rounding of the centre throws off the water to the sides, and it soon dries hard after a rain.

Where box edging is employed, it often becomes too large and thick after having remained some years in one place—now is the time to take it up and relay it. After digging up, the lower roots are cut off with a hatchet, and the young top shoots squared with a sharp knife. The border is then tramped hard and firm, made level or plane on the surface, a smooth cut down three or four inches into the soil, made with a sharp spade along the face of a line stretched on the surface for a guide, and then the box set in with the hand, neat and level, finishes the process. The surplus box can be sold or exchanged with the nurseryman, or employed elsewhere in the ground. Laying of turf and sodding should be forwarded at the earliest opportunity after the frost is out of the ground; the earlier it is done, the better will it be during the season following.

It used to be the universal practice to dig among shrubby clumps at this season of the year, “to let in the air about the roots,” but a light dressing of well rotted manure, raked in with a coarse rake over the surface, is now preferred by all the principal European gardeners, and will no doubt prove as good here.

Nothing adds so much to the beauty of a place as plenty of shrubbery. This is the season for putting in cuttings; many kinds growing easily so. The pieces are cut to about six inches in length usually, and inserted about two-thirds of their length in the soil—much left out of the ground exposes too great a surface to the atmosphere, and if the cutting does not dry up altogether, it is a long time rooting.

Chrysanthemums are now indispensable for autumn decoration of the flower garden. Now is the time to procure a supply. They do well in any rich garden soil that is not too dry. The Lilliputian, or Pomponé class are still popular for conservatory or pot culture, but the large flowering kinds still remain the gems of the open ground.

Hyacinths, Tulips, Liliums, and other hardy bulbs set out in the fall, and covered through the

winter, should be occasionally examined, and when they show signs of active growth, must be uncovered; in this latitude this is not safe until towards the end of the month.

The improvements that the last few years have made in the Hollyhocks have rendered them very popular for ornamenting shrubby borders, to which they add very great interest, and are peculiarly appropriate. They may be transplanted quite early in the season, and flower the more freely for it. They are propagated by dividing the roots in the Spring, or by seeds sown as soon as ripe in Summer. The choice kinds are increased by eyes made by cutting up the flower stems. These are stuck in a gentle bottom heat.

Pæonies, Dicentras, and other hardy herbaceous plants that have been two years in one situation, should be taken up, divided and reset in new soil, if the finest flowers are desired. There is a growing revival of the taste for beautiful herbaceous plants, which the Frenchy fashion of growing a few kinds in masses for mere gaudy display, had well nigh annihilated. Herbaceous plants take a little more tying and fixing through the summer, but make up for it by variety and peculiar interest.

This is particularly the month to pay attention to the hardy annuals. The sooner they are sown, the finer they will flower; that is, provided they are really hardy. Tender annuals, such as *Globe amarantus*, *Balsams*, &c., not if they are sown before the weather becomes quite warm. The seedsman's catalogues usually distinguish these classes for their customers. In sowing annuals, the soil should be slightly stirred with a broad-bladed knife or trowel, and after the seeds are sown, they should have a little soil sprinkled over them, about one-sixth of an inch deep, according to the size of the seed—barely enough to cover is all that is required. Failures usually arise from the seeds being buried too deeply. Failures also frequently occur from the soil with which the seeds are covered being too stiff or clayey, "baking" after a rain. Light sandy earth or decayed vegetable loam from the woods should be employed for the purpose. Stick a peg in where the seeds are sown, so that when turning out the plants in May from pots, the annuals will not be disturbed. Also take care to preserve the names of the kinds. This is a great part of the interest in a flower-garden.

Of annuals that may be sown in March, there are some that are so very beautiful, and which do so well generally, that they at least should be grown. These are a few of them: *Cacalia coccinea*, *Coreopsis Drummondii*, *Erysimum Peroffskianum*, *Es-*

choltzia Californica, *Malope grandiflora*, *Marvel* of Peru, *Nemophila insignis*, *Phlox Drummondii*, *Mignonette*, *Whitlavia grandiflora*, *Clarkia pulchella*, *Gaillardia picta*, *Palafoxia texana*, *Linum grandiflorum rubrum*, *Lobelia gracilis*, White and purple candytuft, and *Phacelia congesta*. Where a hot bed can be commanded, many of the tender kinds can be forwarded under glass.

Planting trees will require particular attention now; but do not be in a hurry the moment the frost is out of the ground. Cold winds are very hard on newly set out trees. Wait till they are gone. Always shorten in a little the shoots of all trees planted. They will grow the faster for it, and are more certain to live. Evergreens should be left to the last.

Herbaceous plants do badly if several years in one place. Every second year, at this season, take up and divide them. Sow as soon as possible some hardy annuals. The earlier they are in the ground after the frost leaves it, the finer they bloom.

In laying out new places of small extent, be careful of aping "principles of landscape gardening" that are only applicable to places of large extent. Remember that everything we do should have a meaning, and that this meaning as often depends on the time and circumstances as on any real existence in the principles themselves. It will be a failure to attempt to make a two hundred feet square lot look like a "country place." It is better to make the gardening border a little on the artificial. In this, terraces, vases and architectural objects will afford much assistance; and neatness, polish and finish generally, be more pleasing than the sober negligence that should characterize a more quiet and extensive natural scene.

FRUIT GARDEN.

Pruning of most kinds of fruits has been accomplished through the winter; it is customary, however, to leave the peach till toward spring, in order to cut out any wood that may be injured through the winter. In other respects, the peach should have little pruning at this season, as it tends only to make it grow more luxuriously, and a too free vigor of growth is a fault of the peach in this climate. The only pruning admissible, is that which has for its object the production of shoots in naked or desirable places.

The Strawberry, where it has been covered during the winter, should be uncovered as early as possible in spring, that the warm spring suns may exert all their influence on producing an early crop; as

soon as growth commences, a sowing of guano has been found to be of great benefit to the crop of fruit.

Raspberries and Blackberries may be planted towards the end of the month; they should be cut down to within a foot of the ground at planting; they will, of course, not then bear the next season after planting. But this is a benefit; no fruit tree should be allowed to bear the same season.

And it may be said of all fruit trees, they should be severely pruned at planting, and every other means resorted to in order to produce a vigorous healthy growth. Fruit, worthy of the name of fruit, is the result of healthy growth, the season previous, and it is impossible to obtain both the same season of planting. If any fruit set on a transplanted tree, it should be remorselessly torn off and cast away.

As we write, reports are reaching us from the Western States of an almost total destruction of peach and apricot buds, by the severe weather. Our friends will yet find it to their interest to take "trouble" with a few trees, and train them to stakes "*an espalier*," by which they can readily be protected by branches, from the sun, which is the cause of the injury by its shining on the frozen buds. Those who have such trees on boards or fences, should take measures to protect the flowers from the warm mid-day sun.

The current forms very beautiful objects trained "*an espalier*," and are very convenient to protect from birds, or to shelter from sun and dry air when it is desirable to keep back the fruit until a very late period of the season.

VEGETABLE GARDEN.

In the hot-bed, Pepper, Egg-plant, Tomato and Cucumbers may be sown—and in a cooler hotbed frame, Early York Cabbage, Cauliflower and Celery. Those who have not got a hotbed can sow a few pots or boxes, and keep them near the light in a warm room.

In the open air, Peas and Potatoes are about the first crops to be attended to; of the former, the varieties have now become so numerous that even "new grapes" will soon have to give way in that respect. The difference, too, is so slight that we are in doubt whether yet to recommend to our readers any other as the earliest than the Prince Albert, so long cultivated, or the "Extra Earlies" of our own seedsmen. The "Daniel O'Rourke" has become an early pea in England. Of early Potatoes, we think Fox's Seedling is the earliest,

though in some localities the preference is given to the Early Walnut. Beets, the Early Six Weeks Turnip rooted, is perhaps the earliest. Carrot, the Early Horn. Cucumber, the early White Spine, or Early Cluster. Lettuce, the Silesian, or Early Curled—to cut before heading; and the Early Butter left to head, are the first in season. Among the Radishes, the Old Short Top, and Red and White Turnip are still ahead; and in Spinach, the Old Round Leaved; so that on the whole there has been little advance made on early kinds of vegetables.

In addition to sowing of the above, Onions, Leeks, Parsnips and Parsley must be sown at this season—not for the main crop, but to have a few in advance for the rest. To keep over the winter, almost all kinds of root crops become tough or coarse if sown too soon.

The Old Green Globe Artichoke, though a delicious vegetable when rightly cooked, is seldom seen in gardens. Now is the time to make beds; they require no peculiar cultivation; what would suit a crop of rhubarb, does for this exactly; and the rhubarb—see that your garden is well supplied; now that it can be dried like apples, and preserved in so many ways, it can be had on the table all the year round.

The Hamburg Parsley also, which has a root like a Parsnip, is very much valued by some. It grows best in rich, sandy soil.

In the open ground Peas and Potatoes receive the first attention. Then Beets and Carrots. Then Lettuce, Radish, Spinach, Onions, Leeks and Parsley. Beyond this, unless in more favored latitudes than Pennsylvania, little can be done till the first week in April. There is nothing gained in working soil, until it has become warm and dry.

GREENHOUSE PLANTS, &c.

Dahlias should now be brought forward. A good plan is to shorten the extremity of the roots, put them in six inch pots and place in a warm greenhouse. In a few weeks they will sprout, when they should be shaken out, divided with a piece of root to each sprout and separately potted in four inch pots.

Camellias will require rather more water while growing than at other times. Just before they grow is a good season to graft. Cut down the stock, cleft graft in the crown, wax, and plunge in a bottom heat of 70°. A great many kinds may be had on one plant by the bottle system, practised by the writer's father, thirty years ago. A shoot

about to grow is obtained and attached to the stock as in inarching, the end of the shoot being put in a small phial of water suspended beneath it. This plan does best, however, with the young wood in July.

Azaleas succeed well by grafting with the half ripe shoots of the present season's growth on plants raised either by seeds or cuttings. Old wood does not take readily.

Chrysanthemums should now be raised from cuttings for fall flowering. They make better blooming plants than off-sets.

Fuchsias may now be readily struck from the young growth from the old plants, which will make excellent blooming plants for the next summer season.

Geraniums, Pelargoniums, Cinerarias, and Chinese Primroses must be kept as near the glass and light as possible; they do little good in shady places. Keep off the green Aphis—for this on a small scale there is nothing like hot water, as described in our last volume; on a large scale, tobacco-smoke in several successive light doses is still the best remedy.

Auriculas, Carnations, Pinks and Polyanthus—the prettiest of florist's flowers must be kept cool, just free from frost, with plenty of air if the best results are desired.

New Holland and Cape plants, such as Epacris, Acacia, Heaths, etc., are now the glory of the greenhouse; hot bursts of sun on them should be avoided, as it lays in them the seeds of "consumption," which frequently carries them off the following summer.

Look out for a good stock of bedding plants in time: by striking cuttings of such things as grow rapidly and speedily, and sowing seeds of such annuals as may be advanced to advantage.

Pansies are coming now into flower. They like an airy frame, where they will not be roasted at midday nor exposed to drying winds, and yet have a free circulation of air and plenty of light. Planted out in such a frame, and the old shoots cut away as soon as the plant has done flowering, the plants will keep healthy over till the next season.

Superior varieties can be raised from seed. Choose those with the roundest petals, best colors, and the first flowers that open, to raise seed from.

Communications.

A JAPANESE WORK ON HORTICULTURE.

BY F. PARKMAN, JAMAICA PLAIN, MASS.

Dr. Hall, who, during a long residence in Japan, collected and sent to America many of the most remarkable plants of that country, has lately received a horticultural work in twenty-five volumes, which he has kindly given the writer an opportunity of examining.

The volumes are thin, containing from eighty to a hundred pages, of the form and size of a very large octavo. The paper is of silk, and the title, as is the case in various oriental languages, is at the extreme right, instead of the left, of the volume, so the book, speaking from our standard, is read backwards. The letter press, as well as the engravings, seem to have been struck off from a plate, and not from moveable types. The character is in the usual vertical columns of Japan and China. There is very little of it, however, nearly the whole work being occupied by the engravings, consisting chiefly of representations of an astonishing variety of plants, and in number not less than two thousand. A few of the plates are colored by hand, but for the most part, they are line engravings, admirably drawn, and perfectly characterizing the variety. Many, however, are designated by wooden or paper labels, represented as attached to them, and bearing their names in Japanese character.

After looking through these volumes, the conviction is forced upon us that the floral treasures of Japan are far from being exhausted, and the art of horticulture has been there cultivated with a skill and assiduity which has resulted in the production of an immense number of seminal varieties, full of interest to the horticulturist if not to the botanist. The work seems to have been issued as a serial, for there is but a very partial attempt at systematic arrangement, though a few of the volumes seem to have a character distinctly botanical, containing representations of plants of little interest in any other regard, accompanied with colored dissections of the vital organs and other parts of the flower.

Among the genera represented, are Magnolia, Rhododendron, Azalea, Vaccinium, Salisburia, Palma, Aralia, Sophora, Ardisia, Acacia, with a host of herbaceous plants, including many varieties seemingly new. But one of the most interesting and characteristic features of the work is to be found in *six volumes* filled with illustrations, hundreds in number, of variegated leaved plants, some of

them of extraordinary beauty. Among the rest, we observed, a variegated-leaved Rose, a variegated Passion Flower, *Sagittaria*, *Arundo*, *Iris*, *Semprevivum*, *Dianthus Heddegi*, *Arum*, *Sauromatum*, Orchids of many sorts, *Acacias*, all distinctly striped, spotted, or otherwise marked upon stem and leaves. There is also a vast collection of variegated *Camellias*.

In another volume, fifteen distinct sorts of Lily are represented, several of them new to the writer.

Another volume is devoted to water plants and Cacti; but one of the most curious of the whole series is that devoted to the instruments and appliances of floriculture. And here, more than ever, we found cause to lament that the abundant notes and explanations in Japanese, which accompany all these plates, were worse than Greek to us. No doubt, useful hints might be drawn from some of them, for no one can examine these volumes without being satisfied that the Japanese are adepts in the arts of cultivation. A multitude of appliances are figured for shading, protecting from cold, and forcing by artificial heat, some of them quite incomprehensible without the explanation. There is also a multitude of flower-pots and vases, of every variety of ornamental device, together with pans and supports; some of them ingenious and tasteful to a high degree.

A volume, companion to the last, is filled with illustrations of the various methods of propagation, accompanied with copious descriptions, causing us more than ever to lament the defects of our Japanese education. First, there is propagation from the single leaf, as modified in its application to different species of plants; then from cuttings; then from layers, in many different forms; then from inarching. In the last case, the plant to be propagated is sometimes lifted with a ball, bound around the roots with wet moss and matting, and in this manner applied to the stock, or a large number of stocks planted near together. The book closes with the grafting of coniferæ and deciduous trees; but strange to say, there is no illustration of budding.

ON THE CULTURE OF THE ONION.

BY J. T. MOUNDVILLE, WIS.

Your Minnesota correspondent, O. H. K., appears much perplexed with his onions, which persist in doing anything but form good solid bulbs, as well behaved onion plants are expected to do.

Possibly I may aid in helping him out of his difficulties. In endeavoring to raise the black-seed

onion, as they are called here, he says he has followed the instructions of the Messrs. Buist, yet his sets when planted invariably go to seed.

O. H. K. may have noted the object of sowing the seed quite thick, viz: "to prevent the bulbs attaining too large a size," but he probably did not know exactly when they were too large, or what would be the matter if they were too large when planted, but I apprehend the cause of his failure with these lies here.

Mr. T. A. Knight was the first, I believe, to direct attention to this mode of growing the onion. His way of raising the young bulbs was to sow the seed at the usual period in spring, "very thickly and on poor soil, generally under the shade of a fruit tree."

O. H. K. being directed to sow the seed in the ground "not over rich," may have concluded that there would be no harm in sowing in land in tolerably good condition. Herein was probably his first error. The seeds were to be sown in drills, and as nothing is said about the distance between the drills, they may have been too far apart, and the plants may have been grown exposed to the sun and not in the shade; these circumstances or any one of them would have a tendency to cause the bulbs to grow too large, and therefore be useless for the purpose intended. By sowing on poor soil the young plants have a scanty supply of food to begin with; by sowing very thickly broadcast, we have a sort of Malthusian pressure of population on subsistence, the plants crowd each other on every side. By sowing in drills unless the plants stand in single file, the outside ones will have a more extensive pasture for their roots, than others less favorably situated. And besides the risk of these being too large, the crop of bulbs will not be so uniform in size as when the whole patch of plants stand at about equal distance apart, and have to share and share alike. Then again, all other things being equal, a plant like the onion can elaborate and store up more sap in direct sunlight, than in the shade or with diffused light, and blossom buds will be much more likely to be developed in the young bulbs when growing in bright light than when grown in the shade. O. H. K. will probably see at once, that his bulbs blossomed and were useless, owing to their being too large, when I state that those raised by Mr. Knight, as above described, "were rarely found much to exceed the size of a large pea."

As you have, doubtless, many readers not professional gardeners, I may state that the advantage of the mode of culture, over that usually practised,

isowing to the young bulb containing a much greater quantity of previously generated sap than a seed, and it has a greater amount of realised and available capital to start with; hence, when the two are committed to the soil, while the plant from the seed is a slender thread-like body, slowly feeling its way at first, the bulb produces at the outset a comparatively stout leaf. This soon matures, and by its action, aided by sap previously stored, gives rise to another and larger leaf. By their united action a third and still larger speedily follows, and so on until a time arrives, when instead of going on forming leaves without end, the whole as with one accord, settle down steadily to the chief work of their existence, viz: to elaborate and store up a quantity of organized sap in the shape of a bulb, which is destined to perpetuate the species by producing flowers and maturing seeds the following year. The more vigorous growth of the plant produced by the bulb, and the greater breadth of leaf surface acquired early in the season, are equivalent in their effects to a prolonged season of growth; hence, by this mode of culture, Mr. Knight was able to grow onions in the comparatively cold climate of England, nearly equal in form and size to the famous onions of Spain and Portugal. "The bulbs he thus raised often exceeded considerably five inches in diameter, and being more mature, they were with more certainty preserved in a state of perfect soundness, through the winter, than those raised from seed in a single season."

If O. H. K. should again have young bulbs go to seed, he may turn them to some account by destroying the flowers; the plants will, in the end, form bulbs, not round, shapely, saleable bulbs, as they would have done if they had not attempted to blossom, but such as may be made use of in the grower's own family. The first experiment I ever made with plants, was to determine this. I had begun to understand something of the mysteries of plant life; that flowers and seeds, for instance, are formed at the expense of all other parts of a plant; that they check rather than add to the growth of a plant, as leaves do; that the same sap which gives existence to and feeds flowers and seeds, may, if the flowers are destroyed, add to the growth of bulbs or tubers, or be stored up in wood, and so on. Well, I was curious to prove this for myself, and thought I could not have a better plant than the common onion for the purpose, as it forms a bulb one year, blossoms and seeds next, and so dies. I planted about half a dozen onions, nipped off the flower buds as soon as seen, tied up the headless stems to a string stretched between two of my

nicely painted carnation sticks, so that no rude blast should upset them and interfere with the result of my experiment. There being something unusual in this, and the utility of growing them so, not very apparent, questions were naturally asked as to the object in view; and when I said I had nipped off the flowers to see if the plant would not again form bulbs rather than die, the incredulous smile which followed, told me as plain as words, these wise old folk (friends of my father) were mentally exclaiming, "how ever could such a foolish notion have got into the lad's head." Rather than subject myself to further annoyance, by an attempt at explanation, I consoled myself with the thought that in the fullness of time, I should be able to show them "there was something more in heaven and earth than was dreamt of in their philosophy." Time and again I examined my plants without finding the expected bulbs, until I almost began to despair as to the result, when one evening noticing two or three of the plants were changing color, I knew bulbs must be formed then or never, and if a jet of nitro oxide had issued from the earth, as I laid bare the bulb of the first plant examined, it could not have had a more instantaneous or ludicrous effect. With a loud "hurrah for science!" away went cap into the air, and away I went twirling round the garden walks jumping and hurrahing in a perfect extasy of delight. I need scarcely add the plants were taken up and laid on the ground where they grew, and I am thinking they were allowed to remain there somewhat longer than was absolutely needed, to dry them for storing.

It would be well if every tyro in gardening would make for himself a similar experiment; for a knowledge of the effects of seed bearing is second only in the importance to that of the uses and functions of leaves, and I have thought at times, when reading the *Monthly* and other journals, that you might render a good service, to some of your readers, if you were to reprint in your columns, Clement Hoare's observations on the disastrous effects of over-bearing on the growth of the grape vine, and on the quality of its fruit. It is a long time since I read his treatise on grape culture, but I remember well, it contains important facts and good advice relating to the matter.

TREE PROTECTORS.

BY DR. J. WEED, MUSCATINE, IOWA.

We continue our record of comparative temperatures, commencing on the 18th of December, the first zero weather of the season.

Our experiments this winter include the temperatures of three structures.

The one which afforded the data for our table last year, eighteen feet long, twelve wide and twelve high, constructed of a double covering of boards, with an intervening space of six inches filled with saw-dust, has again answered our expectations.

Another, the same width and height, eighty feet long, made by nailing inch square strips horizontally six inches apart on each side of rafters eight inches wide, constituting movable frames, the intervening space of eight inches being closely packed with leaves, with the intention of thatching on both sides with straw. The season, however, only allowed of placing the leaves which unfortunately contained numerous lumps of snow. These having since melted away on the occurrence of a warm rain, have left many loosely packed spaces unfavorable to the degree of tightness desirable. The low temperature indicated in this enclosure on the 1st and 2nd of January, was probably owing, in part, to a near vacancy in the leaves admitting a current of air directly upon the thermometer.

The other structure, six feet wide, six high and sixteen feet long, consists of a single covering of rough boards one inch thick and twelve wide, nailed to the rafters after the manner of lapped siding reversed—beginning at the top, thus forming the shoulder of the joints upwards, which it was proposed to render air-tight by luting with coal tar, the joints in the gables to be battened with stripes bedded in the same material. The weather suddenly changed cold before the joints were closed and simultaneously with the fall of a foot of snow, which has since protected all the joints except those in the gables. This structure encloses several quince and one low peach tree; near the base of which a cistern was dug five feet in diameter and eight feet deep, with an open neck two feet wide, constituting a subterranean air chamber—no water having been admitted into it.

The modifying influence of this air chamber is regarded as important, and we have other experiments in view in connection with it, which, if the weather soon becomes sufficiently mild to enable us to complete the enclosure, we shall report in the spring.

The fruit-buds of the peach were generally killed by the cold of the 19th of December, and it is greatly to be feared that the extreme and protracted low temperature of the past two weeks will be manifest in its disastrous effects on those of some varieties of the cherry and plum, and also on many trees and shrubs.

TEMPERATURE.

TEMPERATURE 1863.	OUTSIDE.			Double Boards & Saw- dust.	INSIDE. Frames filled with Saw- dust.	Single Board and Cistern	REMARKS.
December 18th	8°	10°	5°				
" 19	12	2	6	1°			
" 20	8		20	20	26°		
" 22	14			24	24	32°	
" 23	17			23	23	31	
" 24	24			23	23	31	
" 29			12				
" 30	2		0	23	18	30	Snow.
" 31	2	4	21	22	0		
1864.							
January 1st	23	18	18	12	10	26	Clear.
" 2	22	10	6	12	12	18	Clear.
" 3	4	4	0	14	4	20	Clear.
" 4	4	7	4	14	4	20	Cloudy.
" 5	12	6	9	14	2	20	Clear.
" 6	14	4	12	14	2	20	Clear.
" 7	22	2	13	12	4	20	Clear.
" 8	14	2	2	12	2	20	Hazy.
" 9	8	8	7	12	3	22	Clear.
" 10	2	10	12	14	4	24	Clear.

PLANTING ASPARAGUS.

BY F. TROWBRIDGE, MILFORD, CONN.

Having had some experience in planting out Asparagus, (which differs from the mode usually adopted) and which has proved entirely successful, I give it for the benefit of others:

In the spring of 1861 I decided to plant out a few hundred roots. After our spring sales of trees were over, I had plants left unsold, and covered them with dirt until they had started their shoots from 3 to 10 inches. I then took each root carefully and put them out, stems above ground, first of June. Every root started with a rank growth; and the next season cut the grass for a number of weeks. Having had such success in 1861, I pursued the same course with like result in 1862. Last spring, after all my planting was over, and in the midst of the severe drought last week in June, I took up and planted a seed bed, one year from the seed, had started to grow on the 2nd. When the shoots had been growing some weeks, and the grass up 6 to 12 inches, after trenching the rows two spades deep, and filling nearly up with manure, watered the roots twice with like favorable results.

From three successive trials, I am satisfied that that the best time to plant out Asparagus is after it has started to grow—any time from the last of May to last of June.

WIDE GRAPE HOUSES WITHOUT INSIDE POSTS.

BY WM. BRIGHT, PHILADELPHIA.

The great rage, among cultivators of the grape under glass, at the present time, is for wide houses,

or long rafters, with the greatest possible extent of cane.

A wide house, with long rafters, renders it necessary to employ inside posts and braces, to support the roof; which, in houses of any pretensions,

greatly mars the beauty of the structure. A neat, convenient, and efficient method of supporting long rafters, without inside posts or braces, is shown in the following engravings:

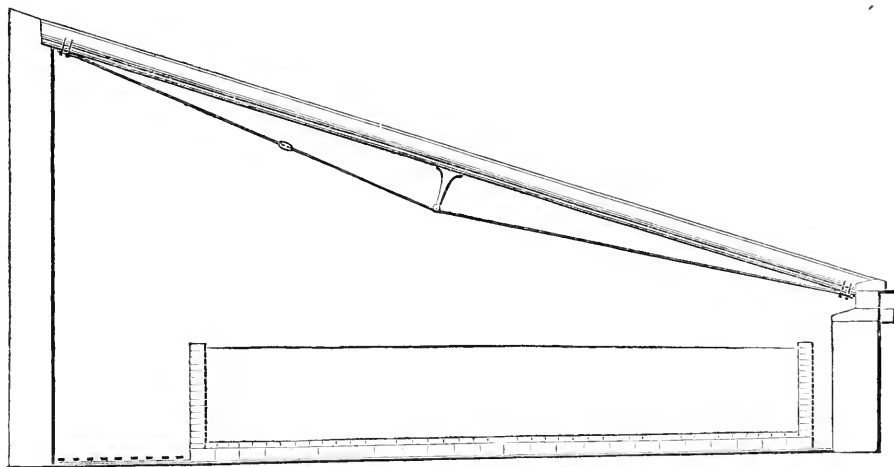


Fig. 1. Lean-to Vinery, with long rafter.



Fig. 2. Rafter, with Wire rope Supporter.

In Fig. 1. we have an end view of a lean-to Vinery, with inside border detached from the front wall, but resting upon a concrete floor. The rafter may be thirty to fifty feet long, if desired, and can be perfectly supported, without inside posts or braces, by means of a Wire rope running over a central wheel, as shown in the engraving. In Fig. 3, we have an enlarged view of the Wire rope, and means of tightening it, should the rafter sink.

Inside posts are always unsightly, and much in the way, and cross-braces of wood make a vinery look more like a barn than a hot-house. We now construct houses of any width, without any sort of inside posts or braces. The rafters are bolted together at the ridge, by concealed bolts, and all danger of spreading or lifting is prevented by bands of iron and bolts running from the rafters and plates, into the solid wall.

The Wire ropes and wheels, employed to support the rafters, in the above design, will be entirely concealed from view by the trellis and vinery.

ACCLIMATIZING OF PLANTS.

BY D.

Individual exertions to extend the range of our plants seem to increase, and even to merge into efforts on a grander scale, made by such bodies as are our horticultural societies. Government itself is creating an Agricultural department, and seems eager to anticipate wants. Such articles, as have appeared in the *Gardener's Monthly*, betoken the interest taken by the public at large, in their endeavors and experiments. And as the public dislikes general theses and pointless objects, the public mind has thrown itself on the grape. "America in search of the wine-grape," is the present phase.

If we knew, understandingly knew, the exact nature of the difficulties in the way, we would soon be able to surmount or to go round most of them. Unhappily we don't know them. All is vague. We know there is a big mountain before us, and we have to cross it; but the mountain itself is hid in

a fog, and instead of the knowledge of the difficulty, we have only the sense of it.

Under the circumstances, anything will be interesting which gives us data, experiences and the points of comparison. And in this light we shall find, of relatively great interest, a paper of Dr. Sagot, treating on the climate and vegetation of Guyana. That gentleman naturally endowed for such study, has had ample time for it, having been sent officially to that colony by the French government. For want of the paper itself, we must content ourselves with an abstract of it in the *Revue Hort.*

The fruit trees of the temperate zone, such as apples, pears, peaches and the grape vine, succeed very indifferently, or not at all in the West India Islands, and other tropical countries. Wherever a comparatively better growth has been obtained, it was found that the trees stood in elevated spots, consequently not exactly under "tropical" influence.

It was generally believed, that the greater heat was the cause of the difficulty. Dr. Sagot says, the greater heat is only one of the difficulties, but not the greatest of them. That is the exceeding great amount of humidity in the air, and the insufficiency of the sun's light, which characterises the West Indies. Africa, on the same degree of latitude as the West Indies, has a drier air and even greater heat, and plants introduced there from the temperate region, succeed relatively well.

In the low parts of Guyana, says Dr. Sagot, some of our vegetables will not grow at all. He instances onions, lentils and artichoke. Others, as green peas, bloom often, but the yield is insignificant. Such vegetables, of which we eat the leaves, like cabbage and parsley, grow well enough, but won't seed. They require, moreover, an unusual amount of care, best drainage, manure and frequent waterings, particularly during the hot season, which is the most favorable. Above all they want the full sunlight, and must, therefore, be grown in well exposed spots. The shade of a tree near them is sure to kill them.

The further we go from the Equator, or the higher we choose the spot, the easier become the cultivation of these vegetables, though in productiveness, still far behind the temperate countries.

The difficulty, then, is in the state of the atmosphere, which is very warm, very damp and therefore also but moderately bright (*lumineuse*.) Clouds are not necessary to weaken the sunlight; an invisible fog will quite effectually do it. At first blush, this diminution of light is not so great in itself, but taken in proportion to the heat and

the dampness, its consequences are important. A plant which, in its native country, enjoys clear sunlight, and a dry atmosphere cannot here elaborate its watery particles, gets disorganised, checked and actually suffocates in its sap. The inhabitants of Guyana, says the plant have died by sunstroke. The sun-strokes never happen during the dry season, but generally in the wet season and after heavy showers.

Nature, then, has given different tempers and constitutions to different plants, which cannot very well be interfered with. If in the tropics, then, according to popular mistake, vegetation is strongest and rankest—innumerable plants cannot grow; others will only grow there and no where else. Banana trees, annanas and other West India plants have been transplanted to Egypt, to the Canaries, to the African deserts, and to ever so many different spots of the same latitudes. In vain the trouble; they would either not grow at all or badly.

To sum up: Dr. Sagot establishes the following parallel between tropical vegetation and that of the temperate and brighter regions.

"In countries near the Equator, arborescent vegetation predominates; the country, so to say, is a forest, flowers are much rarer than with us. The cereal crops, even those which are natives, viz: rice, sorgho and Indian corn, don't yield anything like they do with us. Those vegetables which are cultivated there successfully, being indigenous citizens of the soil, do not yield as abundantly as do ours, nor are their seeds as nourishing. On the other hand, farinaceous roots (sweet potatoes and manioc) yield most abundantly, but don't contain much nourishing substance. The same may be said of fruit, particularly the Banana, so full of mealy matter before it ripens. The grass, above all things, is poor, and hardly sustains the cattle."

"By way of compensation, the yield of the forest is in tropical countries very much larger than in our countries. Comparing a six months' growth of theirs and ours, (for with us there is not twelve but six months of the growing year) we find tropical vegetation heading ours like two to one. In Guyana, five year old trees are as strong and big as fifteen year old ones with us.

"With average heat of 27 to 28 degrees of Réaumur, with a very damp atmosphere and comparatively weak light, vegetation under the tropics is certainly rank, but little albumen is produced against plenty of woody fibre.

"The reverse is the case in countries of tempered climate, and with plenty of sunlight. Vegetation is of moderate dimensions, but what wealth of food?

Abundant crops of grains and of vegetables. The land of the generous vine, of the olive and of grass, which feeds the best cattle and the finest horses." And, we may add, raises also the best race of men, those who by their exploits and knowledge, do their Creator most credit.

The work of colonizing plants must be preceded by the study of the soils' temperature at various depths and the atmosphere at various heights. There must be statistically established the average numbers of sunny hours of the year, and of each separate month. The same must be done to ascertain the degree of humidity in the air. We must, in fact, first learn what constitutes a climate, before we can look for success.

"We are a great nation" for we must needs believe ourselves as well as in ourselves. We are not a scientifically great nation, speaking of science as worth seeking for its own worth. And why should we, being mere infants in growth, struggling even now for its own existence? But we have much of "practical" science among us, an amazingly vast deal of it, considering our infancy. Aided by our variety of soil and climate, we have already achieved much. Cotton, rice and Indian

corn yield more and better crops to us, than in their own homes. Sorghum has been added lately. When shall we have the grape—the generous wine-grape?

PROPAGATING HOUSE.

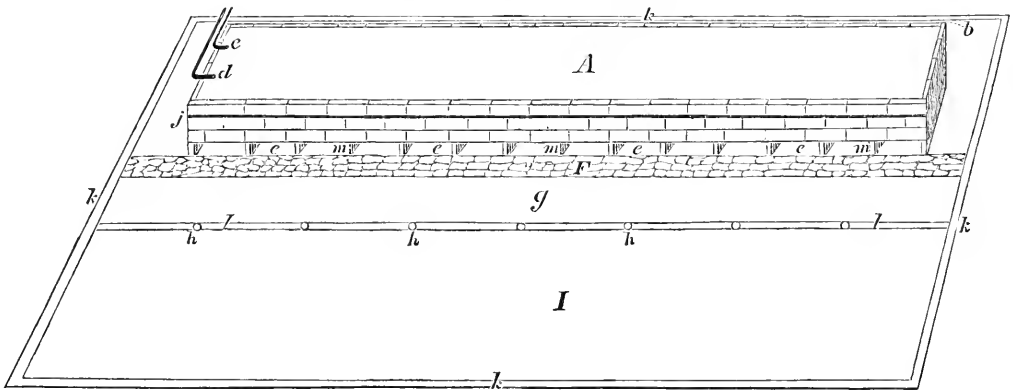
BY A. CUMMINGS, JR., READING, MASS.

DEAR SIR: Permit me, through your Journal, to thank our much esteemed friend, Mr. Henderson, for the excellent drawing and description of his new "Propagating House," which he has given us in the January issue of your paper.

I know of no one, whose opinion on the subject of which he treats, commands more profound respect, than the above named gentleman.

Last season, I built a Propagating house, to which I would call *his* and other gentlemen's attention and criticism.

I do not believe it is the best thing that can be built, but I think I have hit upon the true principle, and shall experiment till I have perfected it. I enclose a rough sketch, drawn without regard to mathematical proportions, but hope sufficiently plain to be understood.



A is tank, 63 feet long, by 3 feet wide.
B is space of 3 inches between tank and outside wall.
C & D are flow and return pipes—2 inches.
E are air chambers under the tank.
F is stone foundation on which the tank rests.
G is walk 18 inches wide.

H—H are posts sustaining roof.
I is a bed raised 15 inches above the walk for Camellias.
J line showing top of tank and bottom of propagating bed.
K sills to the house.
L stone wall, sustaining camellia bed.
M—M bricks on edge forming air chamber.

Size of this house, is 66 x 12 feet, and fronts due north. Propagating tank is built of brick, 8 inches deep, with top and bottom of slate, thoroughly plastered with cement inside. Air chamber under the tank, made with brick placed on edge, and 15 inches apart. An open space of two inches is left between the tank and wall of the house, to admit free circulation all around the tank, which makes radiating surface sufficient to heat the house to 48°

on the coldest night of the season. On top is a row of brick on edge, forming a bed for sand. The top slate are cemented to prevent the escape of steam. A division wall, four inches high, runs through the centre of the tank; making the flow and return without the aid of an additional pipe. The steam created has free access from side to side, thus equalizing the heat in the tank. One inch of water is found sufficient; a greater depth would increase the heat.

Upon testing my work, I found that the glass plunged in the sand, stood at 85°, while the atmosphere, in the house, was only 46°, and the sand was throwing off warm vapor, which must be injurious to cuttings. To reduce the temperature of the sand and escape of vapor, I removed the sand, and laid a false bottom with slate; cementing the same, and leaving an air chamber of $\frac{3}{4}$ of an inch deep between the two. I now found the other extreme—the sand would be as dry as powder in 24 hours. This I found to be a greater evil than the former. I then filled the air chamber with water, and I have no doubt, I have obtained the desired result.

The pipes which supply the tank, are connected to pipes in another house, thus saving an extra fire, and without much if any additional coal.

Next season I shall experiment still further—particularly on a forcing pit, for early celeries, and will give you the result of my operations.

PRESERVING FRUIT.

BY D. M.

Do you know Kennebunc, Mr. Editor? "No." Well, if you don't know Kennebunc, you will still less know me, who is the population of Kennebunc, taking my wife and children as being one with myself, and throwing in Davy, my hired man. And so I'd better tell you all about us. "If you please; Mr. D. M.?" Well, sir, Kennebunc lies right in the middle of our state, that is C'nettent, as we speak it; or Con-nect-i-cut, as we spell it, and my place is right in the middle of what's called Kennebunc bottom, about two hours from Hartford, as the bee flies, and about three hours and a half, as the "General," my brown horse, travels when he goes home; that is, from Hartford to Kennebunc, and not *versa vice*, or *vice versa*, I don't know which it is and which it ain't, but it is no matter. "And what can you do for me?" Bless your precious bones, Mr. Editor, you can do a vast deal for me, my posterity, and all the world beside. I'll not detain you more than a minute, and tell you all about it, in the twinkle of an eye; which is more than your 2.40.

Already you know who I am, and where I am. And now you shall know, that I have something of an apple orchard, in full bearing; and a small pear orchard. And that, whatever else I am, I am a cultivator of fruit, and like to go more and more into the business. "Raising for market?" Yes and no. "You mean New York market?" Well you seem to know that I have pretty extensively done, in Washington market, there. But that I took

there, was the raising of my neighbors twenty or thirty miles round. What comes off my own orchard, I shipped to a foreign market—Liverpool. "You are in the importing line, then, and a pomological shipping merchant?" Thank you for the name, Mr. Editor, though you smile at it, and wishing to deserve that name, is the very thing why I apply to you. "How so?" Why, you see, that's to be shipped to distant ports—and I want to go into the Russian trade next—particularly pears, which, as I understand, fetch the tallest prices there,—much beyond that, I, with native modesty ever dreamt of asking heretofore—that's to be shipped to distant ports, as I said, wants the most particular and 'ticulariest care in the pulling, housing, keeping and barrelling.

I am a self-made man, and like most Yankees, acquire most, by having our eyes open first on our own business, and next on that of other people's. Now, our section of country being so near New York market, and shipping facilities so abundant, storing of fruit is not going on much, and people had'nt to learn the art of it. My own observations are far from being sufficient for me, and so I want to learn yet, how fruit is best handled and preserved? Your much esteemed journal, Mr. Editor,— "Please proceed, without any soap whatever." I take the hint, sir. Your journal, already, has taught me considerably, and I am not going to tell you now, how much I owe to you and your writers, but will plump, come down with the question, How can we, that is, *you*, I should say, best draw out, and at once, the sum and substance of the knowledge all parties? "And your answer, Mr. D. M.?" Well, if you want me to answer for you, I would address the most influential bodies, in regard to this question. I would invite the Horticultural and Agricultural societies, to promise premiums, about in this way: \$500 for the best preserved bushel of pears—kinds named—\$200 for the best preserved barrel of apples—kinds named—\$100 for grapes, etc. None to be less than a year old. *Modus operandi* to be faithfully stated by the happy winner, before pocketing the laurels and the cash. "Something in that, sir." Glad to hear you say so. We Yankees are a liberal race, whatever some few degenerate ones may have done to make people think otherwise, and to draw their questionable admiration for our variety of Americans. "What next?" Why, in the first place, to offer \$20 myself, which I will, when called upon, give to the National Pomological Society, towards these premiums. In the next place, to tell you my own *modus operandi*, not that I believe people can in this line learn much of one, but to show my

good faith, and encourage others to do likewise. "Very O. K., give us the points." Here goes, sir, my observation on pears:

If I want to bring to market ripe fruit at once, I pull when it comes off somewhat easy, with a gentle pull. That determines ripeness.

Do I want to bring early fruit, early to market, I pull when not quite ripe—spread them under a glass cover, keep the air out, and cover them with blankets or any other cloths. This is the way to anticipate nature. I get the best prices in market, for what I bring, and those I may have left on the tree, will get extra fine, as all the good will now go into them, and they will, in their turn, fetch the best price in market. I can also, if I like, leave the worst specimens on the tree, and thus turn them into good and plump ones. This is helping nature in her shop.

This does not apply to shipping kinds, which must be rather late varieties.

As to keeping fruit, my plan is to store them in a dry, not over dry, place on frames covered with strings, so that the air can play about freely. Perhaps coarse canvass would do as well, or lathes, or anything open. I use moveable frames, such as I can conveniently shift. I give them first, the space of eighteen inches, between each frame or shelf, and after a time I shift them to twelve, then to nine, and then to six inches space. Just accordingly as I think more air is necessary, and as more come in. I look to that course, because I am cramped for room, or for the want of it, rather.

Now for shipping. I prefer to pack them, by all odds, in fine hay, No. 1 hay, that is. The second cut will do very well, and may be preferable for being short. They can be pressed close and yet be elastic, and won't lump. The principle is to avoid shaking when they travel. Shaking damages, and then they go. I know of nothing better than fine hay. Sawdust will not do. It may do for grapes. They are no weight comparatively, they pack in layers, and but few of them. Sawdust would gradually sink to the bottom, and leave the upper pears bare; straw is harsh and does not give. Moss, I fancy, would attract dampness, and might spoil the flavor of the fruit. I have not tried either, and so am not positive. Air holes for the barrels. Half barrels preferred. "Is that all?" It is, Mr. Editor, and good bye. "Good bye, Mr. D. M." Say, one more word. "Well, sir." My best respects to the *Monthly*.

Rare and New Fruits.

DANVERS FARMERS' CLUB.—*Grapes and Grape Culture*.—The regular meeting of the Club was held on Wednesday Evening, November 18th, Mr. John C. Butler presiding. The subject for discussion was Grapes and Grape Culture.

Mr. Nathan Page, Jr., said: As his Isabella vines had failed to give him a crop, oftener than once in three years, he had grafted one of his vines with the Rebecca, which was killed last winter, and he inferred that it was not sufficiently hardy. He had also grafted one with Rogers' Hybrid, No. 15, which has grown well, and will probably fruit another season. He had eaten these grapes and thought them very nice.

Mr. Fowler having inquired, if any one was acquainted with the Rogers' Hybrid? The Secretary replied substantially, as follows:

Numbered the plants in the order that they stood the first year. Not according to merit, though No. 1 happens to be one of the best. It is of a light color—bunch, large and sweet—ripe in September—ranks 4th in his list, according to my judgement.

No. 2 was a very large berry, on a good size bunch, but not an extra grape—dark purple.

No. 3, a medium size bunch and berry—the earliest; ripens at the same time with the Hartford Prolific, but the berry does not drop off, like that and the native—of a reddish hue.

No. 4 is a superior grape, ranking second on his list—very sweet, bunches very large and with large berry—as large as the Hamburg under glass; of dark purple color, very showy and bears large crops.

No. 15, the number that carries the palm, has a very large bunch and berry, of a reddish hue, very sweet, an excellent wine grape, a great grower and a prodigious bearer. It ripens from the 15th to the 25th of September. I ate them this last fall on the 10th of September; they were then very sweet.

The crop was then estimated at about three bushels. When the crop was gathered it was 800 or 900 bunches, the majority of them weighing a pound each.

No. 19. Bunch of good size, with dark purple berries—rather thicker skin than No. 4, but not quite so large a bunch, of the same color and about the same quality; a little better grower, and seems to be a little better known and sought after; though I think the No. 4 superior.

No. 43. A good grower, a very fair sized bunch and berry and of good quality.

None of the fruit, that I tried, had any of the foxy taste, or the *very thick skin*, that always accompanies the native.

THE BUFFALO STRAWBERRY.—Mr. Hodge gives the following description :

The fruit is of large size, even larger than the 'Wilson,' and much more uniform in size: red core, juicy, and of superior flavor. A vigorous grower, with large glossy foliage; fruit stalks long and erect, very productive; comparing side by side with the 'Wilson,' I could see but little difference in productiveness; blossoms quite small, and at first sight would be taken for a pistillate flower, but upon a close examination small stamens will be discovered.

THE STANARD APPLE.—Mr. Dunlap has furnished us the following remarks relating to this apple:

This Apple was received from the Buffalo (N. Y.) Nursery, Col. B. Hodge proprietor, in the spring of 1846. The tree came under the name of the Peach Apple, subsequently it came under its true name—the modesty of the Colonel seldom allowing him to send out a fruit under its true name.

The trees fruited in 1849, and have given large annual crops of fine and heavy fruit until the present time. Not a twig has been injured by winter, nor the crop in any wise injured by frost. It bears the same relation to winter apples that the Keswick Codlin does to those of summer, being an early and abundant bearer.

Description—Col. Hodge, in his catalogue for 1845, described it as "large, oblate, green, red and yellow; December to March; very productive, juicy, pleasant, fine." To be a little more precise, the fruit is of large size, slightly angular, rather flattish, and some specimens tapering to the eye; skin at first a dull green, changing to yellow at maturity; deeply splashed and striped with red, dotted with numerous large russet specks, with a slight margin of pale russet about the stem. Stalk rather deeply inserted half an inch long, and holding the fruit firmly to the front spur. Calyx closed, set in a moderate basin, slightly corrugated. Flesh yellowish white, rather coarse, very juicy, with a rather rich sub-acid flavor. Ripens in December and keeps through March. Is a superior cooking and a very good table apple. For cooking it is in use from the first of September, and from that time until the first of April has no superior for this pur-

pose. Add to this that the tree is hardy in all parts of the State, is a rapid grower, a young, abundant and annual bearer, it is a fruit that should not be slightly passed over. The tree is a crooked, spreading, irregular grower, with large deeply serrated leaves, the young shoots of a deep wine color, crowned with a white bloom, with prominent white buds.

The trees have been fruited by several parties in Cook county—among them 'the Old Doctor,' at 'The Grove,' and his brother Joseph Kennicott, at Dunton Station. In my orchards at Leydon are three trees that have borne fifteen crops.—*P. Farmer.*

THE UNDERHILL SEEDLING GRAPE.—The berries ripen from the 10th to the 15th of September, always being fully ripe by the latter date: this in lat. 43½° north, at Charlton, Saratoga county, N. Y.

The vine resembles the Catawba very much, both in leaf and wood. The points of difference are: the earliness of ripening, the larger size of the bunches and berries, and its more delicate flavor. The color of the berry is a dark lilac, with a bluish bloom. The quality of the fruit is fine, rich, sweet, without pungency, pulp, tender and juicy, parting readily from the seeds, of which there are usually but two in a berry.—*Exchange.*

NICKERSON PEAR.—It originated in Readfield, Maine, on the farm of Mr. Nickerson. In form and general appearance, it somewhat resembles Louise Bonne de Jersey, and the specimens were equal to that variety in quality. The original tree came from seed planted by ex-Governor Huntton, when he resided in Readfield, and the tree was transplanted from there to Mr. Nickerson's place. It has borne every year, but a larger quantity is produced every other year. Does not keep a great while after it is in eating. It was exhibited at the exhibition of the Massachusetts Horticultural Society six or seven years ago, and was called the Louise Bonne de Jersey by them. A discussion concerning this pear was had in the *Boston Journal* at that time, and its claim to originality established. The skin of the pear is hard; will not bruise when quite ripe, and is never knotty. Should be taken off about two weeks before it is ripe.—*Report of Maine Board of Agriculture.*

THE GRIMES GOLDEN PIPPIN.—We have received a sample of this apple from the well-known nurseryman, L. N. Wood, successor to Samuel Wood & Son of Smithfield, Jefferson Co., Ohio. Friend Wood says, that all things considered, this

is one of the best varieties of apples in that part of the State, and refers to the report of the Ohio Pomological Society for 1856 and 1857.

In his 'Western Fruit Book,' Mr. Elliott quotes the Grimes Golden Pippin among the standard varieties as follows:—From Brook county Va. Fruit medium, oblong flattened, golden yellow; flesh yellowish white, sub-acid; very good. December to March."

The apple has a deep calyx and basin, long slender stem, small core and seeds, and a little lop-sided in form, which we find to be a characteristic of this variety. Of the good qualities of this apple we take pleasure in bearing testimony. It is firm fleshed, crisp, very rich and juicy; in flavor and sprightliness, about the strength of the Northern Spy, and in general appearance much like the Porter Apple, but not so long. For an apple not positively sweet, this is the richest variety we remember ever to have tasted, and if friend Wood has the stock for sale, we should advise orchardists to put this on their list for a choice winter apple.—*Ohio Farmer.*

New or Rare Plants.

LARIX LYALLI.—A tree found on the Eastern slope of the Rocky Mountains, in the Cascade and Galton Ranges, by Mr. Lyall, at about 49 N. lat., and at an elevation above the sea of between 6000 and 7000 feet. A remarkable species because of the cob-web like wool that clothes the leaf buds and young shoots, and the long fringe of the scales of the former. The tree grows from 36 to 45 feet high, and is therefore much dwarfer than the allied '*Larix occidentalis*,' which is also different in the number of leaves in a cluster, their direction and form, and in the cones.—*PALLATORE in Gard. Chronicle.*

AZALEA INDICA. IMPERIALIS.—A bright rosy scarlet flower, of immense size, superior texture, and perfect form. It is very vigorous in habit, and possesses the double advantage of being a free and very late bloomer. Whether regarded as a variety suitable for exhibition purposes, or for general decoration, this is one of the finest Azaleas.

STENOGRASTA MULTIFLORA.—A pretty dwarf-tufted stove plant, having roundish, ovate, crenate leaves, purplish on the under side, and from the axils of which it produces immense numbers of red-

dish-lilac tubular flowers. Like '*Stenograsta concinna* (from which it is a hybrid) it remains in bloom 10 months out of the 12, and being of free and easy growth, is peculiarly suited for cultivation in plant cases and under glass shades in rooms.

CALCEOLARIA ERICOIDES.—This beautiful hardy herbaceous plant was discovered by Mr. Pearce, on mountains of considerable elevation, near Cuenca, Equador. It is one of the most distinct of its genus. In habit and foliage it strongly resembles a free-growing Erica, and produces long spikes of bright yellow flowers in great abundance.

SPILEROGYNE LATIFOLIA.—A plant of truly noble aspect. In habit it somewhat resembles the famed *Cyanophyllum magnificum*; but whilst being perfectly equal to that species in the magnificence of its foliage, it far surpasses it in habit and the general beauty of its appearance. The stem and leaf stalks are red and thickly covered with reversed hairs. Its magnificent ovate leaves are of a rich velvety olive-green color on the upper surface, and of a beautiful red underneath.

ERANTHEMUM RUBROVENIUM.—This beautiful little plant was sent from Peru by Mr. Pearce. In general appearance it resembles an *Anæctochilus*, is of a very dwarf trailing habit, having all its leaves thickly veined and netted with deep pink. It is of very free growth and easy culture, and will be a great favorite.

POURETTIA PUNGENS.—A hardy greenhouse Bromeliaceous plant, introduced from Chili. It produces erect spikes, 1 to 2 feet in length, of bright scarlet flowers in great abundance. Its habit is dwarf, with pointed radical leaves, the upper of which are pinnate and spiny.

SARMIENTA REPENS.—An exceedingly pretty Chilean plant, of dwarf trailing habit. It has fleshy light green oblong convex leaves about an inch long, with numerous beautiful drooping tubular scarlet flowers, reminding one of '*Mitraria coccinea*.' Its pendulous habit and showy flowers render this a most desirable plant for filling hanging baskets.

JUNIPERUS RIGIDA (Lindley).—This exceedingly handsome hardy evergreen shrub was found growing most luxuriantly at a great elevation on the Hakone ridge of mountains by Mr. J. Veitch, during his trip to the interior of Japan. It is described as growing to a height of 15 to 20 feet, and

having somewhat pendulous branches thickly studded with light glaucous foliage, giving it at once a very elegant and graceful appearance.

NEW AUCUBA JAPONICA.—The true is not variegated, but has beautiful shining green leaves, which, when young, are of the brightest color; and when the female plants are impregnated, it will possess an additional charm in being covered with its large red berries. It may safely be predicted of this new introduction, that in a few years it will be planted in every shrubbery, where it will be quite as valuable as the common Laurel, and, like it, will form admirable hedges. For planting near London and other large towns, it will prove invaluable, for the leaves will not look dirty so soon as those of the blotch-leaved sort.

Such a shrub as this is alone an ample recompense for Mr. Fortune's journey, being, as it undoubtedly is, one of the greatest acquisitions among hardy shrubs that has been made in our time.

The male Aucuba, in Mr. Standish's possession, is, as far as its general appearance is concerned, but little, if at all different from the female. Its great value lies in its producing long catkins of flowers, somewhat like those of *Garrya elliptica*, by means of which the female plants may be fertilized and enabled to produce their beautiful berries. It is very scarce, even in Japan, where it is only propagated for this purpose; but in a few years, when it shall have become sufficiently disseminated, there is no reason why every female plant in the country should not be covered with fruit.—*Cot. Gardener.*

NEW GERANIUMS, 'Zonale Section.'

Ossian—A splendid garden or conservatory variety; trusses very large, with individual blossoms of fine shape, which in their color show a fine combination of the brilliant violet-pace and crimson color seen in *Cactus speciosissimus*. The centre of the flowers is a deep shade of magenta, with an orange-scarlet tint in the top petals; colors proof against sun and rain.

Madame Rudersdorff—As a bloomer this is the finest variety in its section for adaptation to planting in extensive beds and ribbon lines; flowers bright carmine salmon finely margined with white; trusses large, compact and numerous, rising well above the leaves; the individual blossoms of a good form, close lobed, colors proof against sun and rain; habit of growth compact, and of medium vigor, 12 to 16 inches in height, forming a beautiful and distinct new feature in the flower garden, well adapted for middle row between a higher and a lower

color. This variety has proved a beautiful bedder, giving more trusses (full size balls of flowers) than any other we know.

Alexandra—A rival to, and an improvement on Christine; habit vigorous and compact, 12 to 16 inches in height; leaves with dark zone; trusses globular and large; blossoms bright magenta tinted rose with a light shade in the upper centre. Adapted for large groups or ribbon lines, and forming an exquisite middle row between darker tints. Its profuse blooming habit, with a richer tinted Christine color, constitutes a beautiful and effective feature in the arrangement of colors.

CAMELLIA DUCHESSE DE NASSAU.—The raiser of this variety has dedicated it to Her Highness the Duchess of Nassau, the worthy partner of a Prince who is a generous and enlightened patron of horticulture; and to say that the noble Princess partakes of the taste of the Duke for flowers, will but justify the dedication of the Camellia to her. It is distinguished in the category of perfections to which it belongs, by flowers formed of very large petals, slightly toothed at the summit, a particularity in which it is unique, we believe; it is of a very pale rose color, inclining to white towards the summits of the centre petals.—*Gard. Chronicle.*

BEAUTIFUL NEW DAHLIA.—The next most remarkable Dahlia was a light French lilacy flower with pale blue lacing all over the edges, as in Lady Elcho's style of Picotee. This was from Mrs. Jas. Stoddard, the only lady I have ever seen or heard of who was by nature a thorough Geranium florist; and Mrs. Stoddard has a stand for these and all her flowers immediately on the right side, or on the west side of the great Handel Orchestra. Only go and see them, and if you do not find them as I say I shall pay for the journey, be it from Caithness or from Cork. And the third most remarkable Dahlia there was mucronated with pure gold, to speak botanically. When a leaf ends in a sharp point or bristle, botanists say it is mucronate, instead of it will prick you. Well, the points of all the florets of this most remarkable Dahlia are a little peaked as one might say, and that will do for mucronate. The very peaks are of the color of refined gold, but the merest specks only—they stand as regularly as any thing in Euclid; and the ground color of the Dahlia is a rich new shade of scarlet with a tinge of cerise or magenta in it. The name is Gem (Stafford), and it was exhibited by Mr. Sladden, of Ash, near Sandwich.—*Cot. Gardener.*

FUCHSIA 'LORD OF THE MANOR.' — We were asked a few days since if we would inform the readers of this work of the progress of the Fuchsia in 1863, the request being made by a private grower, who buys all the new Fuchsias every season, and who appears to be quite dolorous about the scarcity

of new Fuchsias, and the consequent loss of an occasional new sensation. We have seen a considerable number of promising seedlings this season, but very few that we would venture to bring forward as worthy of a place in history. Among the single-flowered seedlings we have nothing to equal the two sent out this season by Messrs. Pince and Lucombe, namely 'Exhibitor' and the 'Earl of Devon,' and we imagine it will be many, many years ere they are surpassed, for they combine the massiveness and grandeur of the double with the exquisite elegance of the single flower, and though the largest singles yet produced, the plants bloom as profusely as Banks' Glory, and that most showy of all Fuchsias, the old Alpha. We can now, however, select one from among the new double Fuchsias as super-excellent; the raiser is Mr. George Fry, of Manor Nursery, Manor Lane, Lee, Kent, and the Fuchsia has been named 'Lord of the Manor.' This is a flower of immense size, well proportioned, and unusually attractive in color and habit. The sepals are bright carmine, thick, fleshy, quite reflexed, tube long and slender, and of the same color. The corolla consists of broad, smooth, stout, overlapping petals, carmine at the base, deepening towards the margin into crimson and crimson-purple. The figure represents average specimens of flower, bud, and leaf. It will be seen the sepals are so broad as to be almost out of proportion to the breadth of the corolla, but this is a defect of trifling importance in a double Fuchsia, as we never expect in them the artistic grace of a well-built single flower. 'Lord of the Manor' is unquestionably one of the best double Fuchsias yet produced, and will be invaluable for specimen culture and exhibition. Besides the grandeur of form and the bright color of the flowers, it has two other good characters—name-



ly, a healthy and ample foliage, and long slender flower-stems. The flowers thus hang lightly among

the leaves, and have grace not common to double Fuchsias, too many of which are heavy and formal in their aspect.—*Gardener's Weekly Mag.*

PINUS LANCEOLATA.—This is a really noble specimen; I suppose it is doubtful if its like is to be found anywhere in Britain. The height is fully 25 feet, and is beautifully furnished almost from the ground upward. This plant is so thickly furnished with fine healthy shoots as almost completely to hide the dead foliage of preceding years, which, by its persistent character is often a great drawback to the beauty of the species.—*Cor. of Cot. Gardener.*

The *Botanical Magazine* figures the following:

BOLBOPHYLLUM RHIZOPHORÆ: *Mangrove Bolbophyllum.*—A very lovely little plant. Found growing on Mangrove trees by the Nun river, tropical Africa. Flowered at Kew both in April and November. Flowers reddish-purple, yellow, and brown. *t.* 5309.

CLOMENOCOMA MONTANA: *Mountain Clomenocoma.*—It has also been called 'Dysodia grandiflora.' Native of Guatemala. Crimson orange, color of flower very rich, and it may prove to be a valuable summer bedding plant. *t.* 5310.

SONERILA GRANDIFLORA: *Large-flowered Sonerila.*—Native of the Nilgherry Mountains. Introduced by Messrs. Low & Son, Clapton Nursery. Flowers in October. Color deep purplish-crimson. *t.* 5354.

TRICYRTIS HIRTA: *Hairy, or Thunberg's Tricyrtis.*—It has also been called 'Uvularia hirta.' Mr. Fortune found it in Japan. It flowered in November, at Mr. Standish's, Bagshot Nursery. Flowers pearly white dotted with purple. *t.* 5355.

PITCAIRNIA PUNGENS: *Spiny Pitcairnia.*—Native of the Andes in New Grenada. Flowers, or, rather perianths, orange red. A very handsome greenhouse plant. *t.* 5356.

CORYSANTHES LIMBATA: *White-edged Corysanthes.*—This 'perfect gem' was introduced from Java by Mr. W. Bull, Nursery, King's Road, Chelsea. Flowers in October. Decidedly the most exquisite little plant of its size, 4 inches high, that ever came under our notice. Stem transparent, its solitary leaf vividly green and white-reined; petals rich purple edged with white. *t.* 5357.

SEDUM SIEBOLDII: *Siebold's Sedum.*—A Stonecrop from Japan. Introduced by Messrs. Henderson, Pine-apple Place. Leaves glaucous, tinged with purple. Flowers purplish-rose. *t.* 5358.

DAMMARA ORIENTALIS: *Dammara, or Amboyna Pitch-Pine.*—Native of Moluccas. Perhaps the rarest of all Coniferae cultivated in Europe. *t.* 5359.

Obituary.

MR. HOWARD DANIELS died recently in Baltimore, where he was superintending the Druid Hill Park. He was one of the best Landscape Gardeners in the United States, and the profession sustains a severe loss by his death. He was fond of his business to an eminent degree, sparing no pains or expense to make himself a thorough master of the art. He had collected every work on Horticulture he could hear of, and had probably the best private library of Horticultural books in the country. His greatest fault was his modesty. Like most men of substantial attainments, he recoiled from competition with quackery, hence he was not as well known as he deserved to be; and his end is another illustration of the trite remark, that we do not know the value of our best men till we lose them.

DR. BOOT, one of the most distinguished of American botanists, died recently near London, where he had resided for some years past. He was particularly distinguished for his researches among the difficult tribe of Sedge grasses (*Carex*.)

DR. E. EMMONS, the Geologist, died on October 1st, 1863, within the rebel lines at Brunswick, N. C. He was born in Massachusetts, in 1798. Prof. Dewey, in *Silliman's Journal*, says he died loyal to the last.

MR. CHARLES MCINTOSH.—We regret having to announce the loss of another distinguished gardener. Mr. McIntosh died at his residence, near Edinburgh, on the 9th ult. He was born in 1794, at Abercainey, in Perthshire. After serving as head gardener to the Marquis of Breadalbane, Sir T. Baring, Prince Leopold, and finally the Duke of Buccleuch, Mr. McIntosh became a professional Landscape Gardener. He has been long and favorably known as a writer on horticultural subjects, his first work, 'The Practical Gardener and Modern Horticulturist,' being published in 1828, and his last and longest work, 'The Book of the Garden,' in 1863; but as far back as 1825 he communicated to the *Gardeners' Magazine* drawings and descriptions of a new verge cutter, and a tub suitable for the growth of Oranges, or other large shrubs.

The Gardener's Monthly.

PHILADELPHIA, MARCH, 1864.

✉ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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COUNTRY LIFE.

Reports of enormous profits from fruit raising, or some other branch of husbandry, are continually paraded in the public papers. "A German Farmer, at Sandusky, made over \$900 per acre in Grapes last year." Another man in Delaware, "made over \$10,000 clear on one hundred acres of Peach trees." Again another "netted \$5000 on seven acres of Strawberries," and one fortunate individual "made \$2000 on an acre of Blackberries." These are specimens of strange stories, such as, no doubt, all our readers have heard of, during the past year.

All these things are simple absurdities. The laws of trade admit of no such large profits. Competition invariably keeps all things at the lowest paying profits—and whenever any one man can obtain large returns on small investments, it is owing to some new discovery he has made for himself; or to some natural faculty of business shrewdness with which nature or education has endowed him.

So far as the profits of fruit raising are concerned, a shoemaker or a tailor, who thoroughly understands his business, will make more money than a fruit raiser who does not; yet, all advantages being equal, there is no doubt but that an intelligent and business like investment in the raising of fruit is, to say the least, as profitable and as certain an investment, in the long run, as any pursuit a man can engage in. It is the ridiculous or exaggerated stories of profits that we object to. They do no good to any one, but they do immense harm in a quarter not expected. A few thoughtless men, who have failed or are unfitted for other pursuits, in the hope of reanimating their joyless lives or cashless pockets, are tempted to embark in the speculation, and usually fail, disgusting and debaring even other men of the same calibre as them-

selves from attempting it for awhile; but rarely is an intelligent business man caught by the figures. Their glaring absurdity disinclines him to examine what little of solid worth there is beneath them.

Enormous profits are occasionally made from fruit raising, as they may be from making buttons; but in every case we know it was the business tact that did it. Peach raising for instance. We remember a case, where a man unexpectedly found himself the owner of a very large crop of Peaches. He was a wealthy man, having already succeeded well in his regular business. Figuring up, he found that at the regular rates of transportation, and the price then ruling in his nearest market, they would yield him a handsome profit; but he had sense enough to know that when his large crop was brought into market the prices would fall, and thus it became a question. Some of the usual expenses of marketing had to be reduced to admit of this, and his decision was to buy a steamboat, and he took not only his own, but his neighbors' peaches to market besides. After awhile he took passengers and freight of other kinds; and there is no doubt he did make an enormous profit on his peaches in *this way*.

We have been at some pains to ascertain what is the profit of agricultural pursuits, as they are generally followed with us—considering fruit-growing for market as one of the branches of agriculture—and are satisfied it does not average $2\frac{1}{2}$ per cent. Instances are plenty, where one crop or one season shows an enormous gain, but the fair thing is to take a five, or at least, a three years' course of the whole estate.

In the instances where science and good practical shrewdness have gone together, we find that an average of 10 per cent. on a five years' course is a certain result. We have no hesitation in saying, that fruit-raising will average this annually, without any extraordinary talent, and as certainly as the best stock security in the land.

As often enjoyed, country life is an expensive thing. It takes a farm in the city to keep up the farm in the country. But there is no reason that we know of, why the majority of our heavy merchants, might not have their self-sustaining fruit and regular agricultural stock farms, within ten, twenty or even fifty miles of their places of business, on which they would either live altogether, if not too inconvenient for daily access—or several months in summer if farther off.

And live too, as Heaven intended them to live—a part of nature—not to support her, but to be by her supported. To share in the warmth and thus

shine—the cool bracing air—the music of the birds, the beauty of the flowers, the rippling of the running waters, and the innumerable other blessings, mental, moral and physical, which nature liberally provides for all her children who follow her in all these natural ways. We know of none so insensible to the pleasures of country life, as not to be willing to forego some conveniences, that he and his family may enjoy it at least a portion of the year; but it is only natural for him to expect, that the investment should in return pay its own expenses, as it certainly can and should do.

It is for intelligent capitalists, among the agricultural community, to show citizens what really can be done on a farm—not by absurd stories, or an occasional lucky hit on some one crop; but by a carefully prepared balance sheet for a series of years, in a business way. The mere health and pleasures alone of country life, will never attract capital in any way to the soil. But prove that in addition to this, there is a regular income of 10 per cent. per annum; and country seats and improved farms will spring up around our cities as by magic, and the whole country reap an estimable benefit, for no trite saying is truer, than that improved agriculture is the basis of a nation's continued prosperity.

IMAGINATION AND FANCY IN GARDENING.

The celebrated English Landscape Gardener, J. C. Loudon, was a man of unusually keen and correct perceptions. He once expressed himself astonished that Americans, with so much inimitable natural scenery, and with indeed natural scenery of every description so abundantly about them, should be satisfied with, what the English term, the natural system of Landscape Gardening. In this Loudon was right. In Europe where art is everywhere, a truly natural design in gardening is a pleasant luxury—a relief from the every day occurrence of an artificial scene. It is hence that the Dutch style of gardening soon gave place to the modern one, when once fairly understood. Right lines and angles, to a nation which had little of nature left, soon gave way to curves and irregularities—and we who have nature enough and to spare, continue to imitate them, erroneously estimating beauty to lie in certain inherent principles, instead of the circumstances under which seen.

The writer has nearly stood alone in urging this point on the attention of American gardeners. One of the earliest efforts of his pen, was an article to the *Horticulturist*, expressing these views; but its lamented editor, Mr. Downing, was so fully

imbued with the "natural style," as laid down in his Landscape Gardening—and that truly talented work had gained for its author such a well merited claim on the horticultural community, as an authority in these matters, that, to this day, American Landscape Gardening is measured by the rule of how far it is an 'imitation' of nature."

In our country we have enough of nature on every side. We have never yet seen the man, however great might be his love of nature—no matter how beautifully natural the spot he selected for a house, who did not feel a natural impulse that something more was required of him. He had to dress it, and shave it, and trim it, as surely as he would do to his own personality. Nature in one sense, may make the man; but in another, and very essential sense, it is the tailor who goes largely into his make up; and so it is art makes Landscape Gardening. Let nature make as pretty a scene as she may, man must do more than she does, or can do, before it will be a garden.

It is curious to notice, how universally the uneducated American—that is, uneducated in the principles of natural taste, as laid down by Downing and others—rebel against the laws of said taste, and we find a striking inconsistency almost as universal in the practice of the most ardent professors of this school of garden artists. And it is still more singular, that the greatest successes are where the rules of the master have been the most set aside. When a man decides to lay out a place, if conscious of his own deficiencies, he sends for his Landscape Gardener; and he is shocked to learn that the straight avenue, lined with shady and beautiful trees, which he always thought so grand, is, from its being merely straight, in bad taste, and must not be considered; and all his pretty geometric styles summarily laid aside as perfectly inadmissible. In view of his conscious ignorance, however, he gives way for a time; but invariably comes to insist at the last, that his trees at least shall be straight, regular, compact, well finished, perfectly balanced—in short be, what is well known to the trade, as "perfect specimens," and in short, it is lost time to endeavor to convince him, that the crookedness of an oak is its greatest beauty.

And it is in those places, where we find the rule of following nature the most departed from, that we see the most successful instances of Landscape Gardening. The best instance that occurs to us as we write, is the country seat of John Ashurst, Esq., in Delaware County, near Philadelphia. We have had but one opportunity of ever seeing this place,

and then but for a few hurried minutes, and have no notes; but no one who sees it but for a few moments, will never forget its chief features, and, associating pleasant recollections with them, feel in this fact alone, an instructive certainty, that the "principle" is correct.

On entering from the main road, the drive is by a straight avenue, perhaps the eighth of a mile long.

On each side of this drive is a strip of lawn, about 15 ft. wide, and then a row of deciduous trees rather close together, not less, we believe, than ten feet apart. The trees are perhaps 40 years old, and their soft mellow foliage, softened still more by the bold width of green turf beneath, must make it an exceedingly pleasant summer drive. The usual objection that straight roads are monotonous, does not here apply. Every foot of the road, as one progresses, reveals new scenery, and the whole journey is a moving panorama of the prettiest character, excepting that we move instead of the picture. At the termination of the straight avenue, which is on level ground, the mansion is seen on the top of a high, but gentle rise, directly in front. The character of the ground here calls for another style of beauty, and advantage being taken of a bridge over a creek to terminate the avenue, the road is made to turn gradually and gracefully, and wind easily around the hill to the front door.

Ascending the hill, you now begin to read the planter's mind as clearly by his works as if he were present and told you all. We use the masculine form as most expressive of an unknown cause, yet it is tolerably evident that to a lady's fancy much that we see is owed. A few scattered shrubs, of rare and choice kinds, first remind you that you are fast leaving unshorn nature, and are reaching the domains of art. These are first only on one side. Farther on, the other side has a very few, and then again, on the other, they become quite crowded and begin to take regular forms in their massed outlines. Not satisfied with art, thus far, it is at length made more apparent by a border of osage orange, thick as a hedge—it is a hedge in fact, on the roadside border of the termination of this piece of shrubbery. The whole design of the place has too clear a language for us to suppose this fancy means nothing, so we look about for the explanation. It is found in an alcove or bower, across the lawn, between which and the road, the shrubbery is thrown. This alcove looks down on the shrubbery, and the osage orange will form a lovely back ground to the view after it grows up. The alcove itself is formed, we think, of Hawthorn, planted so as to form about

two thirds of the outline of a circle about ten feet in diameter. It was kept neatly trimmed in hedge fashion, and was about six feet high; making a perfect screen from all observers. A few feet from the Hawthorn, on the outside, were six or eight trees of the Kentucky coffee, about 20 or 25 feet high, forming a grateful summer shade for the retreat beneath.

Returning to the road, and advancing towards the house, by its left hand course, on the right the eye takes in, on a rough rocky hill, a splendid piece of natural wood, whose age carries us back to a long past generation. There is too much cultivation and refinement around it, to favor barbaric associations with the early history of this country. The whole picture has an eminently classic look. One might fancy that in such a place as this:

—There lived a Knight

Not far from thence, now for many years
A hermit, who had prayed, labored and prayed.
And even laboring had scooped himself
In the hard rock a chapel and a hall
On massive columns, like a shorecliff cave,
And cells and chambers: all so fair and dry;
The green light, from the meadows underneath,
Struck up and lined along the milky roofs;
And in the meadows tremulous aspen trees
And poplars made a noise of falling showers.

All in harmony with these feelings, on the edge of the wood, we come to an old ruin, as completely ivy covered as it well can be. There is nothing but the walls standing. The effect of the ivy is much increased by large specimens of tree box, perhaps 15 feet high, standing about the ruin, the shade from these box trees, adding to the deep recesses of the ruined walls. In the neighborhood of the ruin are old specimens of the bush or edging box—probably approaching a hundred years of age, but which we thought had not been made as much use of as they might have been, probably from a consciousness of the danger of failure; and we had to admit to ourselves the wisdom of handling it, either with much caution or not at all.

Leaving, however, the right with its antique associations, and following the left course of the road, we are led to read a treatise on modern gardening, with evidently no fear of the rules of "nature" in the author's mind.

On ascending to the top of the hill, we are rather taken by surprise, to find it a nearly level terrace of about an acre, extending from the house in front. This has been made, and instead of the edge of terrace being a usual sodded slope, the slope is a dry wall, and in and out of the stones of this wall, a hedge of different mixed plants, principally Honey Locust and Washington Hawthorn has

grown up. The hedge completely disguises the fact of a terrace being there, until one is on it, while the walling up (done, we suppose, after the hedge was planted) keeps the soil of the embankment firm in its place.

On the terrace, shrubbery is arranged in beds and belts, sometimes backing, and sometimes bordering flower beds. Sometimes dividing one bed or border from another; ever fanciful, but always full of meaning. In some places the walks are straight, in others curved, just as the carriage road is, and just as they ought to be. They express in themselves what they are for, and why they were made as they are, and their reasoning convinces us. The place is by no means perfection—and herein is the beauty of a place truly artistic—it even affords scope for improvement.

We don't want anything more beautiful than nature.

It is a splendid picture on which we gaze, and never tire; but we want the art of the gardener to put life in this picture, to clothe its bare form, and give it an expressive countenance, and a language by which we may learn the author's meaning; and if that meaning shall interest and please us; elevate our thoughts, and exercise a conscious refining influence over all we do—whether we receive all these blessings like school boys by “pot hooks or hangers”—by straight lines, or by circles—we shall, at least, feel that we have imbibed the real spirit of Landscape Gardening, before which mere “natural rules of form” must ever bow.

THE NEW VOLUME OF THE GARDENER'S MONTHLY.

The publisher desires to thank the friends of the *Monthly* for their successful efforts in increasing the circulation of the magazine.

In one respect an evil has resulted. Though expecting an increased list, he was unprepared for one so great. Consequently the edition was exhausted before all got supplied, and many complaints of the non-arrival of numbers was the natural consequence. As the *Monthly* is stereotyped, another edition had to be struck off, causing some delay, for which, he hopes, under the circumstances, to be pardoned.

Straps and Queries.

✂ Communications for this department must reach the Editor on or before the 10th of the month.

✂ The Editor cannot answer letters for this department privately.

ROGERS' HYBRID, No. 15, AGAIN—*Lindley & Hinks, Bridgeport, Conn.*—In the fall of 1862, we purchased of Mr. Edward S. Rogers, some thousand eyes of his hybrids, No. 4, 15 and 19.

We were successful in growing them, and applied to Mr. Rogers to get us an electrotype, by means of which, to bring our vines before the public.

He replied to us as follows: “I send you the blocks of No. 4 and 15, by Express, which you can return after using. And as the engravings are not good representations, and not much more than half the size, these kinds were grown last season, *I do not think it would be hardly worth while* to get electrotypes of them from these blocks, but in the fall to get out some from better specimens.”

On receiving the blocks, we thought the size as large as the public credulity was prepared for, and preferred having the grapes *larger* than represented, rather than smaller, and feeling a delicacy in regard to using Mr. Rogers' blocks for all our printing, we took them to New York and had electrotypes taken from them, in accordance with the spirit of Mr. Rogers' note, from which we have quoted above.

We loaned them to you, under the impression, that all growers, as well as the public, would be benefited by giving them the widest publicity.

P.S.—In a note, just received from Mr. Rogers, he informs us that the blocks which he loaned us were presented to him by Mr. Wilder, which fact he did not inform us of at the time.

NOTE ON THE BIGNONIA CAPREOLATA AND B. CRUCIGERA—*A. W. Corson, Plymouth Meeting, Pa.*—I desire to know whether there are two distinct species of the Bignonia, one called *Crucigera* and the other *Capreolata*, or whether the two names are used as one species.

I find both named on the sale catalogue of the Bartram garden, the common names added, were, for the *Capreolata*, the four leaved, and for the *Crucigera*, the cross bearing; both, in the list, of hardy vines. In the *Hortus Kewensis*, published in 1812, being a Catalogue of Plants, cultivated in the gardens at Kew, England, they are also both described as *foliis conjugatis circosis*, the *Crucigera*

also stated to be *bifolia et trifolia ligno cruce signato*, and designated as Cross bearing Trumpet Creeper, native of South America, and marked as a woody stove plant—while the *Capreolata* is called four-leaved Trumpet flower, native of North America, and marked as a hardy woody plant.

In the American edition of Rees' new Cyclopaedia, the description of *Crucigera*, is "leaves conjugate cirrhose, leaflets cordate, stem muricated" "deriving its trivial name from a section of the stem, which represents a cross, sent to Mr. Miller from Campeachy." Then follows, in brackets, a statement, signed Bartram, probably William, that the people of Carolina used the vines, with other ingredients, in making beer. And in the same work the *Capreolata* is described "leaves conjugate, cirrhose, leaflets cordate lanceolate, bottom leaves simple, also sent to Mr. Miller from Campeachy, and a native of Virginia and Carolina." In Elliott's sketch of the plants, in the Carolinas and Georgia, he names only the *Capreolata*, which he notices as the *Capreolata* of Michaux, of Pursh, and of the species *plantarum*; being the same as the *Crucigera* of Walter, and is described as "leaves conjugate, cirrhose the lower ternate, leaflets ovate cordate acuminate," no mention of four-leaved, or of the appearance of the cross section of the vine.

In "Nuttall's Genera," *Crucigera* is mentioned as not indigenous to the United States.

In "Michaux's Flora of North America," the *Capreolata* is described as two-leaved, but no notice is taken of the singular appearance of the cross section of the vine.

And in "Gray's Manual," the *Capreolata* only is described, in which, among other things, is "leaves of two ovate or oblong leaflets, and a banished tendril, often with a pair of accessory leaves in the axil, resembling stipules. Virginia, Kentucky and westward, a transverse section of the wood showing a cross.

Notwithstanding the statement, that in two collections of plants, under the direction of worthy Botanists, both species are mentioned as being cultivated at the same time. The description by Grey, which is the only specific description, that notices the accessory leaves, leads to the doubt, whether it is not the four-leaved Trumpet Creeper and also thy cross-bearing.

A line or two in the *Gardener's Monthly* may give the opinion.

[We have seen these Bignonias in many collections, sometimes under one name and again under the other, and have settled down to the opinion, that there is but one species. The only work we

have by us in which the two are described, is the old Herbal of Thomas Green, where they are given as distinct, but like the descriptions in Gordon's Pinetum, noticed last month, the descriptions are so nearly alike, that the inference is fair, that they are both the same. We should be glad if any of our botanical readers could decide the point for us.]

THE COLD OF JANUARY IN THE SOUTH WEST.—Our section of the country seems to have escaped the very severe cold "snap" of the 1st of January. Here in Germantown, the thermometer did not go below 5°.

In Kentucky, Tennessee and Missouri, it was very severe.

A correspondent from Demosville, says:—The 1st day of January, 1864, was the coldest day that was ever seen in Northern Kentucky. The thermometer stood 10° below Zero all day.

Sweet Cherries are nearly all killed to the ground, both young and old. Peach trees are all "gone by the board." Has this been the case all over the country?

A lady, writing from Henderson, Kentucky, says:—The glass was 16° below Zero, and though my hot and greenhouses were heated by hot water, and had board shutters, my plants were destroyed. Peaches, and many Pears have been injured, but Cherries look well.

Our Springfield, Mo., correspondent, writes: We have experienced the most intense cold ever known to that very common, but somewhat mystical personage, "the oldest inhabitant." The last day of the old year, wind from the north-west, blew a perfect hurricane, accompanied with a heavy fall of snow: Thermometer at 7 A.M., 1° above Zero; at 5 P. M., 2° below.

The morning of the first, Thermometer at 7, 26° below; at 12, 15°; at 5 P. M., 4° below.

The fury of the blast Thursday and Thursday night, was truly appalling to witness, as frozen noses and frozen "toes" amply attest. A number of persons actually froze to death. Our hardiest grapes were much injured, and *fruit trees*, in some localities, nearly or quite destroyed.

GRAPES FOR GREENHOUSE.—*Novice, Columbus, Ohio.*—A friend has a greenhouse, in which he wishes to cultivate some Foreign Grapes. What are the best four varieties for that purpose? Can grapes and greenhouse plants be grown successfully in the same house?

[Buckland Sweetwater, Golden Hamburg, Grizzly

Frontignac. Grapes can be grown pretty well with plants; but of course not quite as well as when separate.]

BRICK MAKING MACHINE—*J. G. L., Mount Pleasant, Westmoreland Co., Pa., writes*:—I noticed in one of your *Monthlys*, dated March, 1860, Vol. ii. No. 3, page 78, an article on Drain Tiles, describing a machine for making tiles and brick right from the clay bank without the use of the pug mill. Please do me the kindness, and let me know where such a machine can be purchased.

[We know nothing more, than noticed on the page referred to, but should be glad to hear more from any one who has tried it.]

CORRECTION—*T. S. K.* sends us the following correction:

On page 371, Dec., 1863, you say, "*oration*," "a public address," and *orally*, "by word of mouth," are, no doubt, derived from the Latin *ora*, "a sea coast."

Permit me to suggest that these words are derived from *Os, oris*, a mouth; as Cicero says: *in ore omnium esse*—that is, in everybody's mouth, or the common talk; another Latin phrase of the same meaning, is *in ora vulgi*—that is, in the mouth of the people, or the common talk.

Ora, oræ, is the Latin for the extremity of a thing, the border, edge, margin, coast, sea side, end, boundary, shore, &c.

I know of no English word, derived from *ora*; *Horizon* is Greek.

[Our lingual studies scarcely warrant us in going deeply into this matter. We intended to illustrate the difficulty of tracing the ancient roots of modern words, and possibly chose an unfortunate illustration. We knew that Webster gives *oris* as the root of '*oration*,' but supposed he was in error, as he certainly often is in other respects.

In our early latin studies, it struck us as singular that the term *oratio* was of somewhat modern use, and confined, through all its change of form, to conditions of 'declamation.' If we remember rightly, it is more used by Cicero than by any other Latin writer. The older Latin authors seem to have relied more on the verb *Concio* to express public speaking,—and when a higher order of eloquence was attached to the idea, a new word was called in to express it, as is the case with new ideas to this day.

We give this opinion, however with diffidence, making no pretension to extra classical attainments.]

GRAPES AND DWARF PEARS FOR CANADA—*A. B., Toronto, inquires*.—I am going to plant a couple of acres, next spring, with dwarf fruit trees, and about one acre of grape vines. Would you please give me hint as to best kind of grape for this locality, and the best kinds of dwarf pears, for this locality.

I have my grounds thoroughly drained, and have had a root crop in them this year, to clean them of weeds and to break up the sod.

Hoping that your people will stop fighting and attend to their gardens is the earnest desire of your correspondent.

[For Canada we should plant, Clinton, Delaware, Concord and Hartford Prolific, among grapes.

Pears—Belle Lucrative, Beurré d'Anjou, Beurré Diel, Beurré Langelier, Beurré Superfin, Brandywine, Louise Bonne de Jersey, Urbaniste, Vicar of Winkfield, Howell, Tyson, Passe Colmar.

Our correspondent wishes no more heartily for peace, than every true American does, and has done for the last three years; but if, when he finds his national ship with a pretty big hole knocked in her bottom, and is endeavoring to stop the leak, he appears a little excitable and unreasonable; it is to be hoped disinterested lookers on will bear with his weaknesses, till he finishes his job. If he founders at last, 'tis but natural to wish to float as long as possible.]

NEW GRAPE—*Subscriber, Cleveland, O.*—We know, really, very little of the grape you name. A bunch was sent us two years ago, and we could not give a favorable opinion. It is possible that the bunch was injured by transportation, but that did not occur to us at the time. It is praised all around, and may deserve it—we hesitate till we know more about it. New fruits are like old horses, which can be fixed up, by care, to look amazing nice for a little while; but when we remember the \$20 premium, awarded to the Clara Grape, and the many other mistakes that have been made with new fruits, we incline "slightly" to the doctrine, that in much haste there may be little speed.

CAPE JASMINE—*W. W.*—Will the editor of the *Gardener's Monthly* please inform me, how to manage a Cape Jasmine?

[Plant it out in the open ground, in rich soil and partially shaded, carefully repot in September. This is the easiest and best way of growing this beautiful plant.]

NAME OF PLANT—*J. H. Thomson.*—*Lopezia rosea*.

Domestic Intelligence.

MAKING SUPER-PHOSPHATE.—I procure the bones at from 50 to 80 cents per 100 pounds, throw them into a hogshead sunk one half its depth in the ground, (or what is much more convenient, into a tight, strong trough, somewhat similar to those formerly used for holding pomace when making cider), pour over them 10 gallons of water, then empty 1 carboy best 'Chamber's' sulphuric acid; and in that proportion increase until the bones are all covered. As they dissolve and sink down, add more bones, until the whole becomes a thick, pasty mass, which it will in the course of two or three weeks. Care must be taken to keep it covered tightly, and avoid letting the acid touch any part of the clothing, as it will certainly leave its mark. When wanted for use, have ready along side of the tub a bed of fine *mould, dry muck or plaster*, into which shovel or ladle the mass, turn over and mix until sufficiently dry to handle pleasantly. Poultry dung and plaster are valuable additions. The result, from applications of phosphate so manufactured, has *always* been highly satisfactory; one application of which, to a field of rye was remarkable in its effects, and will furnish a subject for a future communication if desired. I have sometimes broken or chopped the bones up with an old axe or hatchet.—WM. P. TOWNSEND, in *R. Advertiser*.

SOLVENT FOR OLD PUTTY AND PAINT.—Soft soap mixed with solution of potash or caustic soda; or pearl ash and slaked lime, mixed with sufficient water to form a paste. Either of these laid on with an old brush or rag, and left for some hours will render it easily removable.

ACADEMY AT LANSING, MICH.—The Botanical Department is connected with the Horticultural, under the charge of Mr. A. N. Prentiss. Very great progress has been made in getting the grounds supplied with specimens of such trees, shrubs, and plants, as are suitable for open air culture in the latitude of Lansing; and the tuition, so far has been as perfect as the nature of the study would permit; but until greenhouses and propagating-houses are erected, this study cannot be as fully and thoroughly taught by direct practice, as is desirable.—*Exchange*.

TREE COTTON IN CALIFORNIA.—I am now engaged in raising Tree Cotton. The first year, from

seed, it grew four feet. Frost don't affect it. The second year it bears a small quantity of cotton, and the cotton is mixed with the seeds; and third year the cotton and seeds are separated. After the third year the yield is one hundred pounds of cotton to each tree. The tree grows as large as the peach tree.—C. E. CAMPBELL, in *Prairie Farmer*.

ONIONS.—Mr. Meeker, of Westport, a famous cultivator of the onion crop, thus describes his mode of raising them:—

"Our mode of preparing the ground is, as early practicable in the spring, to cart on about 20 tons of manure to the acre, having previously had it thrown into a heap, that it may be well heated, and thus kill all noxious weeds. After spreading, we plow it in, turning it in so deep that the harrow will not draw it to the surface. If it will not turn under readily, a man, following the plough, pushes it into the furrow. We next cover it thoroughly with a wooden-toothed harrow, then use the brush, leaving the ground in good order for raking, which is done with a common wooden hay-rake. We then sow from $3\frac{1}{2}$ to 4 pounds of seed to the acre. When the onions are up, we commence hoeing, and the weeding follows, which is continued at regular intervals, as long as required. In September, the tops become dry and fall, when onions should be pulled and spread on the ground, separating the green ones from the dry. The latter should be raked into heaps, after a few days; for if allowed to remain too long exposed to the sun, they will assume a dull-red color, and be liable to injury. When well cured, remove them to a building for the winter, where they should be spread upon a platform, about a foot from the floor, giving them air, when the weather will permit. In topping them, cut about an inch from their bulbs. Hog-manure and wood-ashes are the best fertilizers for this crop."—*Canada Farmer*.

THE LOMBARD PLUM.—This is on the whole the most certain and reliable plum for the Northern states. During the severe winters, it has been scarcely affected, while other varieties have been badly injured—it is a fine strong grower, and an abundant bearer. In recently examining an experimental orchard of about 60 varieties, which had been nearly all stripped of its fruit by the curculio, (owing to absence of the proprietor,) the Lombard had a fair crop. The fruit although not of the very highest quality, is pleasant and agreeable, and better than some famous sorts—such as the Washington, Smith's Orleans, &c.—*Country Gentleman*.

Foreign Intelligence.

TEA ROSES.—Mr. William Paul, F. R. H. S., Paul's Nurseries, Waltham Cross, contributes the following to the *London Gardener's Chronicle* :

The Tea-scented is the only first-class group that remains unnoticed, and this is quite worthy of a separate paper. It is unfortunate that the most beautiful varieties are, as a rule, the tenderest. Those who have grown them out of doors only, can form no idea of their increased beauty when cultivated under glass. Plant them out in a house with or without heat ; if heat be employed they will grow stronger, bloom earlier, and suffer less from mildew. The strong-growing sorts may be trained to pillars, or up the rafters of the house in the way of vines, and will produce flowers from every joint. The intermediate and dwarfier kinds may be grown as pyramids and bushes. Tea-scented Roses succeed admirably grown in pots under glass, especially if worked on the Manetti, and require little pot room and little pruning when in a young state. If grown out of doors, the best plan is to plant them in a border in front of, but a little distance from, a south wall, for if fastened to the wall, they are liable to suffer from the attacks of Red Spider. Budded on the Dog Rose in August, and allowed to remain dormant through the winter, they form beautiful objects in the flower garden during the succeeding summer and autumn. No lover of Roses should reject the Tea-scented because they are tender, or on the assumption that they are difficult of culture; they are better worthy of a house or frame than half the greenhouse plants that are cultivated, and far easier to manage than one-fourth of the Hybrid Perpetual Roses. But then they must not be treated as ordinary Roses. If grown out of doors, a warm and light, rather than a moist and heavy soil, is required, and they should not be pruned till late in spring (April). Distinct in color, exquisite in form, rich in foliage, and surpassing all in delicacy and power of fragrance, they deservedly hold a very high position among the subjects of the 'Queen of Flowers.'

Abricote is a good hardy free-growing sort, though scarcely vigorous; the flowers are fawn color with apricot centres, large and double, very beautiful as buds. *Adam* has rosy blush flowers, very large and full, and is one of the sweetest and best. *Amabilis* is a good, hardy, vigorous-growing sort, with large, full, flesh-colored flowers. *Auguste Ogier* has large

rosy flowers, with deeper colored centres, and is of moderate growth. *Auguste Vacher* is distinct and good; the flowers are yellow shaded with copper-color, of good average size and quite full; the growth is moderate. *Belle de Bordeaux* is of rampant growth, and the branches are well clothed with beautiful deep green leaves; the flowers are pink, large and full.

In addition to the above, *Bougere*, although one of our oldest Roses, cannot yet be dispensed with; the flowers are rosy bronze, very large, full, and globular; the growth is vigorous. *Clara Sylva* is a good pure white Rose with creamy centre, large and full, of moderate growth. *Comte de Paris* is a beautiful flesh-colored flower, shaded with rose; large, full, hardy in habit, and of great excellence. *Comtesse Ourcraff* is beautiful in bud, but does not always expand symmetrically; the flowers are rose shaded, large and full. *Deconiensis*, which is an English seedling raised at Plymouth, is still one of the best; the flowers are pale yellow, very large, full and beautiful. *Duc de Magenta* has immense salmon-colored flowers, which, if few in number, are of unequalled breadth and substance. *Elise Sauvage*, Madame William, and L'Enfant trouvé—for I regard these as one and the same—is one of the sweetest and loveliest of the group; the flowers are yellow, with a rich orange-colored centre, and very sweet; the habit is sometimes robust but more usually delicate. *Enfant de Lyon* deserves a special word of commendation on account of the freedom with which it flowers, and the exactitude of its form; although it resembles 'Narcisse' a little too closely, it is of a paler yellow. *Eugene Desgaches* is quite first-class; its large, full, and globular clear rose-colored flowers are very beautiful; the growth is vigorous. *Gloire de Dijon* stands unrivalled and alone; it is as hardy as a summer Rose, having lived through the winter of 1860-'61 in places where all the Hybrid Perpetual Roses were killed; flowers of this Rose were sent to me from Dijon, before it was introduced, and exhibited at one of the Horticultural Society's shows at Chiswick. I have seen it grow 20 feet in a season, trained against a house, producing leaves of a size and substance truly remarkable; the flowers are yellow, fawn, and salmon, variously shaded, large, full and globular. *Josephine Malton* is a beautiful but delicate Rose with cream-colored flowers, large and double.

Julie Mansais, I may add, is not one of the freest of Roses, but when well grown it is certainly one of the loveliest; the flowers are usually white,

though sometimes tinged with lemon, large and full. *La Boule d'Or* is the deepest yellow of this group, and sometimes beautiful under glass; out of doors the buds are often as hard as a cricket-ball, and as little disposed to open; it is nevertheless desirable for its color, and is hardy, vigorous and free. Loose petals of this Rose were sent to me from Paris the year before it was introduced. I was struck with the color, but adjudged it too hard in the bud; Rosists can make out a flower from a petal as physiologists an animal from a bone.

Louis de Savoie is a fine large pale yellow Rose, good for under glass. *Madame Bravy* is a prettily shaped cream colored flower, good out of doors as well as within. *Madame Damazin* is very free, both in growth and flowering, and hardy also; the flowers are salmon color, large, full and sweet. *Madame Falcot* is quite first-class; it is much the style of 'Saffrano,' but deeper in color, and more double; it remains to add that it does not grow so freely as that old favorite. *Madame de St. Joseph* has very large salmon pink flowers, powerfully fragrant and of great beauty; it is best under glass. *Madame Halphin* differs from all others; the flowers, which are large and tolerably full, vary from salmon pink to yellowish white. *Madame Pauline Laboute* is a large flat salmon colored rose, showy, and very hardy. *Madame Villermoz* is one of the gems of this group, the large, full, wax-like flowers—white shaded with salmon—and splendid foliage, unite to form an object of rare beauty; the habit is also hardy, the growth free. *Marquis de Foucault* produces variable flowers, white, fawn and yellow, large, very sweet, of perfect outline, but not full. *Moiret* is a grand old Rose, but one that is only occasionally to be caught in perfection; the flowers are pale yellow, shaded with fawn and rose, very large, full, and of great substance. *Narcisse* deserves universal cultivation; the flowers are yellow with creamy edges, perfectly circular and full, reminding one of a transverse section of a hard boiled egg; the plant is hardy, the habit good and free. *Niphotos* is a match for 'Due de Magenta' in size, though more globular in form, and of a different color—pale lemon to snowy white. *President* ranks also among the largest and most beautiful of this group, surpassing both the preceding in fragrance and form; the flowers are rose shaded with salmon. *Saffrano*, in the bud state, is one of the most beautiful, but the expanded flower is thin and poor; the buds are apricot, the flowers fawn color; the plant grows so freely, flowers so abundantly, and is withal so uncommon in color, that it forms a most attractive object in the garden. *Som-*

bricul is a good hardy free flowering white Rose, of large size and vigorous growth; well suited for out of doors. *Souvenir d'Elise Vardon* is an indoor Rose, varying in color from white to creamy yellow, very large and of great substance; the flowers are usually few but fine. *Souvenir d'un Ami*, or 'Victoria' as it is sometimes called, is not surpassed by any other in the group; the flowers are salmon and rose shaded, large full and globular; the constitution is hardy, the foliage fine. *Vicomtesse de Cuzes*, if of loose and irregular shape, produces flowers of exquisite color, coppery yellow, and cannot be set aside as a decorative Rose in house or garden; it is very sweet, free, and tolerably hardy.

Horticultural Notices.

NATIONAL POMOLOGICAL SOCIETY.

The Hon. Marshall P. Wilder, President of this popular society, has appointed the 13th of September next as the date of the biennial meeting. It will be held at Rochester, New York,—and from the increasing interest in fruit-growing, and the success of the society, we have no doubt it will prove one of the most successful sessions ever held.

FRUIT-GROWERS' SOCIETY OF WESTERN NEW YORK.

This society held its annual or winter meeting on the 27th of January. The usual large number of members were in attendance, and a fine but limited collection of fruit was exhibited.

The afternoon meeting opened with the annual address of the President, S. H. Ainsworth, of West Bloomfield. It was wholly occupied with the subject of the culture of the grape, and embraced many interesting facts, showing the high profits that had always attended the good and judicious culture of the best hardy sorts—varying from \$400 to \$1,200 per acre, above cost of cultivation and marketing, according to a large number of instances, which were cited, of the actual products of vineyards last season.

The following is a brief outline of the discussion at this meeting of the Society:

Hardiness of the Peach on Plum Stocks. On the whole, the expression was decidedly unfavorable to this mode of propagating and growing the peach.

KEEPING WINTER PEARS.

H. E. Hooker had found them to keep best put

up in rather large and cold packages—in barrels or half barrels. He thinks they are best ripened in a cool cellar, instead of being brought into a warm room to complete the process, as has been recommended. Keeping them in a cool atmosphere retards the ripening, but this period cannot be greatly retarded without injuring the quality. Some cellars are too dry, and the pears shrivel; others are too damp, and they decay or become mouldy—the proper medium is of great importance. G. Ellwanger agreed in main with these views, and he found it of great importance, to hang as long on the tree as they could with safety. He prefers half barrels for packing and sending to market. They are kept in cool barn cellars—cooler than any house cellar. He had two barrels of very fine Winter Nelis, the day before Christmas, kept in this manner.

BEST NEW SORTS OF THE PEAR.

Charles Downing named the following promising sorts: *Doyenne du Comice*, *Durandean*, *Jones' Seedling*, *Dani's Hovey*, *Lycurgus* and *Wilmington*, but he had not sufficient experience yet, to speak of them with confidence; they must be tried longer. G. Ellwanger thought the *Edmonds* (a large, early autumn sort) one of the best, and the *Belle Williams* as very promising. H. E. Hooker strongly recommended the *Durandean* or *De Tongres*, but had not found it a strong grower. W. B. Smith said, although it was very handsome and an abundant bearer, and suited many palates, it was to acid for him, and the tree was not vigorous. C. Downing said, with him it was an excellent pear, and strong grower, but, that in many localities, it drops its leaves too soon.

BEST FOURTEEN VARIETIES OF THE PEAR.

Doyenne d'Été, *Rostiezer*, *Tyson*, *Osband Summer*, *Beurré Giffard*, *Dearborn's Seedling*, *Bartlett*, *Belle Lucrative*, *Sheldon*, *Flemish Beauty*, *Beurré d'Anjou*, *Lawrence*, *Desnonnes*, *Pratt*, *Beurré Superfin*, and *Winter Nelis*, were generally named, among their favorites.

WHICH ARE THE BEST VARIETIES OF GRAPES FOR WESTERN NEW YORK?

Mr. Frost, Rochester—The Hartford Prolific, the best early grape—next, the Delaware and Concord.

Judge Larowe, Hammondsport—would say the Hartford Prolific, Delaware and Concord.

H. N. Langworthy would name H. Prolific, Concord, Delaware, Diana, Issabella and Rebecca, but thought the Diana would ripen well, and exhibited some, which had been grown upon a western exposure, which were very well grown.

PLANTING AND PRUNING THE GRAPE.

J. J. Thomas thought we ought to allow more room than American cultivators generally do.

W. A. Underhill, of Croton, commenced with trellises, 6 feet high, and afterwards increased them to 9 feet, and in consequence increased the product nearly twice. Both he and his brother, Dr. Underhill, thought the vines became more valuable as they became older. Some, 23 years old, were more valuable than those of 12 and 15 years.

H. H. Olmstead has a vineyard of 10 acres of Delaware grapes, planted at a distance of 12 feet, so as to render easy access with teams to put in manure and gather the fruit.

Judge Larowe would plant grapes 8 feet each way. Thought the experience of the old world, would aid us in forming just conclusions in regard to pruning the grapes. The proper way is to fill the trellis with new wood and fruit, and cut out all the old wood. Each vine should be pruned according to the habits of the variety. Would not cut back much the cane, intended for next year's fruit bearing. Those bearing this year should be cut off just beyond the fruit. In this way you have less shade—practised nearly upon the renewal system. Would never prune or work in a vineyard when in blooming season, as it interferes with the setting of the fruit. The nearer you get your grapes to the surface of the ground, the richer your grapes will be in saccharine matter.

H. H. Olmstead had found loss from too close pruning in the summer—rubs off the shoots he does not need for fruit or next year's bearing, but would not prune much after the fruit set.

Dr. Sylvester thought we had made our vines sickly by over manuring. Where the ground is rich enough to raise good corn, it is plenty rich enough for grapes.

BEST WINTER APPLES.

Upon the results of the past very favorable season, the following vote on the best six varieties of apples for winter market, was had:

Rhode Island Greening, Roxbury Russet, King of Tompkins County, Northern Spy, Golden Russet and Baldwin.

Officers of the society, for 1864, were elected as follows:

President—P. Barry, Rochester.

Vice Presidents—Hugh T. Brooks, Joseph Harris and W. B. Smith.

Secretary—James Vick, Rochester.

Treasurer—W. P. Townsend, Lockport.

Executive Committee—J. J. Thomas, C. W. Seelye, E. Moody, E. A. Bronson, H. N. Langworthy.—*Ab. from Country Gentleman.*

OHIO POMOLOGICAL SOCIETY.

Meeting of the Committee ad-interim at Cleveland, September, 1863.—Discussion on Grapes and Peaches.

This meeting was held on Wednesday evening, the week of the State Fair, for the purpose of examining some of the Fruits on exhibition at the Fair, and discussing their merits, &c.

GRAPES.

Cuyahoga—Specimens nearly ripe, quite good.

Lydia—Specimens fine—from Mr. Carpenter, of Kelley's Island, and Mr. Campbell, of Delaware.

Mr. Campbell said the *Lydia* had fruited finely with him this season—though last year it showed some disposition, in common with many other varieties, to rot; less, however than the Catawba, Diana, Anna and some others.

Allen's Hybrid—Another white or light-colored grape.—Mr. Campbell said it fruited well with him this season, and it is very handsome and good grape.

Mr. Bateham said he hoped this would prove just what we wanted for a hardy white grape; but, from what he had seen of the vine and fruit, he was afraid it was too much like to its foreign parent to prove hardy and reliable here.

Rebecca—Fine specimens exhibited, and the fruit esteemed by all present, but the feeble growth of the vine and liability to mildew in unfavorable seasons, were admitted to be serious objections.

Crevelling—Specimens fully ripe (good but not high flavored) resembling *Isabella*.

Mr. Bateham said he was pleased with the variety, especially on account of its earliness.

Mr. Campbell found it earlier than any other black grape of decent quality, much superior to the Hartford Prolific in its flavor and freedom from pulp, as well as in hanging perfectly on the vine, even when over ripe.

Diana—Fine bunches exhibited from Columbus, Cleveland and other sections—not fully ripe, but quite good, and promising well. Specimens of a *spurious* kind were also exhibited, quite worthless in character, but the vines have been extensively disseminated for genuine.

Anna—Specimens unripe, and the testimony of all who have tried it was, that it ripens too late to be of value in this latitude.

Ontario and Union Village—Specimens of both of these were exhibited and so nearly alike, that most persons would say they were identical.

To Kalon, Garrigues and Louisa—Dr. Taylor said could only be regarded as sub-varieties of the *Isabella*, and of no particular value.

'Aiken' and Isabella—Most of grapes exhibited at the Fair, as *Isabellas*, were of the kind having large compact bunches, and large round berries, so unlike the old style *Isabellas*, that few persons could regard them as the same, and yet the testimony of a large number of growers, would seem to show that the change is only result of soil, season and culture.

Capt. Stewart said he had found in his vineyard great difference among *Isabella* vines, in the size, shape and time of ripening of the fruit, as affected by the soil and location; could cut some ten days earlier than others, and thinks all the difference in the specimens exhibited may be effects of soil, etc. Mr. Storrs, of Painsville, expressed the same opinion.

Dr. Taylor thought it would be found that the large round specimens grew on rich sandy land where the roots found plenty of food and moisture, and the vines not over-loaded with fruit. Dr. Kirtland had told him, that last fall he found the large round (*Aiken*) variety growing on his ground, where the vine stood near a *sewer*, while other vines of the same origin, on common soil bore old fashioned *Isabellas*.

Concord—Only a few specimens at the Fair, but very good. Mr. Bateham thought this variety was becoming more popular than had formerly been expected. Though not a first rate grape in quality in quality, its merits in other respects were sufficient to gain for it, the good will of the people.

Taylor's Bullitt—Dr. Taylor said this variety had done so much better with him this year, that he felt inclined to speak more of it than he had done formerly. It may prove valuable especially as a wine grape.

Oporto—Was thought to be too mean a fruit for even the possibility of making wine that could be palatable.

Roger's Hybrids—Specimens of several varieties exhibited from Mr. Campbell's collection. Mr. Bateham said he was apprehensive that people will be disappointed in not finding the fruit of finer quality.

Mr. Campbell—As to quality, none of them equal the Delaware, or approach near it, so far as I have at present tasted them. But I regard Nos. 3, 4, 5, 9, 15, 19 and 23 as superior in flavor and quality to *Isabella* and *Concord*, while they are, most of them, also, much superior in size and appearance to those varieties.

PEACHES.

Dr. Taylor had a fine dish labelled *Middleton's Imperial*. The tree came from New Jersey, and was sold to him under that name, but he finds no such name in any of the books or catalogues. It is a large handsome yellow peach, ripening early in September, about the season of Crawford's Late; not as highly colored as that variety, but like it apparently; not sufficiently productive for a good market variety. Dr. T. thinks it may prove to be the *Susquehanna* or *Griffith* peach of Pennsylvania, which it certainly resembles. [Probably Petit's imperial, which we thought the *Susquehanna*.—Ed. G. M.]

Bergen's Yellow—Mr. Bateham said he believed this to be the finest market peach known to him, as coming in season after Crawford's Early, and before Crawford's Late; though he was not quite certain in regard to its productiveness. It is called Orange Free Stone in some parts of Ohio. The Jacques' Rare-ripe is also a good yellow peach, ripening about the same time, and much esteemed for the markets, though not as rich and juicy as Bergen's.

Hale's Early—(Too late for specimens.) Mr. Bateham said he had seen this variety in bearing this season for the first time, on the grounds of Storrs & Harrison, at Painesville—where the Serrate Early York and Early Tillotson were growing in the same row and under precisely the same circumstances. From what he saw and tasted of the fruit he can say that its merits exceed the highest anticipations, as to earliness, size, looks and quality of fruit, and the habits of the tree; and he is not at all surprised to learn that people are loud in its praise wherever it has come into bearing. The Chicago peach growers say it is so much earlier than any other good market variety, that they are in want of another kind equal to it to fill up the interval of a week or so between the time when Hale's is finished and the next comes in.

Dr. Taylor said he had seen and tasted the fruit the two past seasons, and it was undoubtedly the best early peach extant. Market peach growers were now eagerly buying and planting the trees in all parts where it is known. The nurseries would not be able to half supply the demand for trees.

Mr. Marshall, of Massillon, had fruited it this year; ripe about ten days sooner than Early York (Serrate), fruit handsomer, full as good, and tree much healthier. Mr. Boalt, of Norwalk, Dr. Beardslee and Mr. Storrs, of Painesville, bore the same testimony.

In a letter received by the Secretary since the meeting, from Dr. L. Collins, of St. Josephs, Michigan, where peaches are grown most extensively for the Chicago market, he says:—"Hale's Early is first in season, then what is here called Wheeler's Early (a very poor little peach), and next Troth's Red. The only fault I have seen in Hale's is it shows a tendency to rot on the tree, like some others in this region, in some seasons.—*Abridged from Ohio Farmer.*"

INDIANA POMOLOGICAL SOCIETY.

There was a fair attendance and a fine display of fruits and wines. The opening address by the President, I. D. G. Nelson, presented forcibly the identity of interest between Agriculture, Horticulture and Pomology, which he said were joint partners for the general prosperity of the country.

The list of apples, recommended for general cultivation, was read and the following stricken out: Early Strawberry, Gilpin or, Little Red Romanite, White Winter Pearmain. Pryor's Red was recommended for cultivation south of the National Road, and Westfield Seek no Further for the North.

We regret that we have not the list, recommended as corrected. The "Ben Davis" was adopted for general cultivation for market purposes. Pickard's Reserve was adopted as promising well.

Pears—Dr. Helm, of Muncie, read a paper on the planting and cultivation of pear. He said it was very essential to have sound seed. Probably one-half the seed we generally get is worthless. The best time to plant is in the fall, as late as the ground will bear working. When planted in the spring, they will fail to come up three times out of four. He did not believe in root grafting, preferring to bud the stocks and cut up the roots.

Dr. Helm thought the good varieties limited to eight or ten—considering hardihood and freedom from blight, the Flemish Beauty is the best variety.

Mr. Nelson also regards the Flemish Beauty as the best variety, bearing young and abundantly. The White Doyenne is next. The Bartlett is good except for hardiness. He considers the Winter Nelis hardy, but not very productive.

The Louise Bonne de Jersey was stricken from the list, as unworthy of consideration, on stocks for standards.

Grapes—There was considerable discussion upon this subject, the Delaware consuming a good share of the time. Gentlemen generally agreed, that false physiological conditions were the cause of whatever failure the Delaware has made.

Dr. Warder thought the list sufficient, but if gentlemen wished to recommend a particular grape for every man, let it be the Concord.

The following motion finally passed.

While we regard the Delaware and Catawba, as better in quality, we recommend the Concord as the best single variety for the million.

Peaches—But little, that was new, was elicited in the discussion upon this fruit. Hales' Early was recommended as promising well.

Strawberries—Mr. — Loyd, of Indianapolis, discussed different varieties, among which, Wilson's Albany and Triomphe de Gand, were presented as particularly valuable. He had realized from \$600 to \$800 per acre from strawberries, when properly attended.

Dr. Warder spoke further, in reference to strawberries, recommending the following for trial: Golden Seeded, Jenny Lind, Fillmore, Extra Red, Russell, Mote's Seedling, Knox's '700,' all of which were put on the list, except the '700.'

The list of raspberries was read, and the Catawissa recommended for amateurs.

The name of the society was changed to the Indiana State Horticultural Society.

ILLINOIS STATE HORTICULTURAL SOCIETY.

The Annual Meeting, of this active association was held at Alton, Ills., commencing, Dec. 15th.

A very interesting essay on the Peach, was then read, by Dr. Hull, of Alton, in the course of which he recommended the following varieties, in the order of ripening.

1. Serrate Early York.
2. Haine's Early Red.
3. Large Early York and Crawford's Early.
4. Bergen's Yellow and Oldmixon Free.
5. George IV. and Crawford's Late.
6. Late Admirable and Columbia.
7. Smock.
8. Heath Cling.

The committees on apples reported:

APPLES FOR NORTHERN ILLINOIS.

Market.—Red Astrachan, Car. Red June, Keswick Codlin, Early Pennoek, Sweet June, Pomme de Neige, Bailey Sweet, Maiden Blush, Fall Swaar, Lowell, Striped Gilliflower, Ramsdell Sweet, Yellow Siberian Crab, Winesap, Rawle's Janet, Domine, Jonathan, Willow Twig, Gilpin, Minister, Tallman Sweeting, Yellow Bellflower, Northern Sweet.

Family Use.—Early Harvest, Car. Red June, Keswick Codlin, Benoni, Hocking, Sweet June, Pomme de Neige, Bailey Sweet, Maiden Blush, Fall Swaar, Aut. Strawberry, Holland Pippin, Lowell, Rambo, Striped Gilliflower, Dyer, Mother, Haskell Sweet, Yellow Siberian Crab, Fulton, Winesap, Rawle's Janet, Domine, Jonathan, Willow Twig, Yellow Bellflower, Tallman Sweeting, White Winter Pearmain, Westfield Seek-no-further, Roman Stem, Northern Spy, Ramsdell Sweet, Swaar.

Trial.—Kirkbridge White, Duchess of Oldenburg, Fall Orange, Northern Sweet, Fall Wine, Montreal Beauty (Crab.) Transcendent (Crab,) White Pippin, Paradise, Win. Sweet, N. Y. Pippin, King of Tompkins County, Hubbardston's Nonsuch, Broadwell, Newtown Pippin, Rhode Island Greening.

APPLES FOR CENTRAL ILLINOIS.

Market.—Early Harvest, Golden Sweet, Bailey Sweet, Maiden Blush, White Winter Pearmain, Domine, Winesap, N. Y. Pippin, Willow Twig, Rawle's Janet, Newtown Pippin, upon rich limestone soils and with high cultivation.

Family Use.—Yellow June, Early Harvest, Sweet June, Red Astrachan, Keswick Codlin, Golden Sweet, Ramsdell Sweet, Am. Sum. Pear., Benoni, Car. Red June, Maiden Blush, Fall Wine, Buckingham, Bailey Sweet, Fulton, Hubbardston Nonsuch, Aut. Swaar (of the West,) Pomme de Neige, Domine, Jonathan, Pryor's Red, Swaar, White Win. Pearmain, Roman Stem, Peck's Pleasant, Esopus Spitzenberg, Winesap, New York Pippin, Rawle's Janet, Newtown Pippin, Ortle, Lady Apple.

Trial.—Early Joe, Downing's Paragon, Rome Beauty, Ladies' Sweeting, Sweet Romanite, White Pippin, Nickajack.

APPLES FOR SOUTHERN ILLINOIS.

Market.—Early Harvest, Red Astrachan, Carolina Red June, Yellow Bellflower, Winesap, Rawle's Janet, Newtown Pippin, Pryor's Red.

Family Use.—Early Harvest, Large Yellow Bough, Am. Summer Pear., Rambo, Yellow Bellflower, White Winter Pearmain, Pryor's Red, Newtown Pippin, Rawle's Janet.

Trial.—Yellow June, Sine-qua-non, Porter, Rome Beauty, New York Pippin, Willow Twig, Nickajack.

The foregoing lists were subsequently adopted "with some trifling amendments," not stated.

The Pear committees submitted reports, which were adopted with slight amendments as follows:

PEARS FOR NORTHERN ILLINOIS.

For Market.—Bartlett, standard; Flemish Beauty; Louise Bonne de Jersey, dwarf.

For Family.—Doyenne d'Été; Osband's Summer; Bartlett, standard and dwarf; Flemish Beauty; White Doyenne, standard and dwarf; Belle Lucrative; Louise Bonne de Jersey; Sheldon; Howell; Seckel; Beurré d'Anjou; Urbaniste; Lawrence, dwarf.

For Trial.—Beurré Giffard, Beurré Clairgeau, Tyson, Onondaga, Beurré Hardy, Duchesse d'Angoulême, Beurre Diel, Winter Nelis, Doyenne d'Alençon.

PEARS FOR CENTRAL ILLINOIS.

For Market.—Bloodgood, Bartlett Doyenne Boussock, Easter Beurré.

For Family Use.—Bloodgood, Doyenne Boussock, Bartlett, Howell, Louise Bonne de Jersey, White Doyenne, Belle Lucrative, Sheldon, Seckel, Beurré Bose, Gray Doyenne, Beurré Diel, Duchesse d'Angoulême, Glout Moreau, Winter Nelis, Easter Beurré.

PEARS FOR SOUTHERN ILLINOIS.

For Market.—Doyenne d'Été, Bartlett, Fondante d'Automne, White Doyenne, Louise Bonne de Jersey, Duchesse d'Angoulême.

For Family.—Doyenne d'Été, Rostiezer, Tyson, Bartlett, Fondante d'Automne, Howell, Seckel, Duchesse d'Angoulême, Easter Beurré.

For Trial.—Osband's Summer, Beurré d'Anjou, Glout Moreau, Bloodgood, Lawrence, Sheldon, Onondaga.

President.—Smiley Shepherd, Hennenpin, Putnam Co. Illinois.

Vice Presidents.—O. B. Galusha, Vice President at large; Jonathan Periam, Thornton Station, Cook Co.; C. N. Andrews, Rockford, Winnebago Co.; A. R. Whitney, Franklin Grove, Lee Co.; J. H. Stewart, Quincy, Adams Co.; W. A. Pennel, Granville, Putnam Co.; J. O. Dent, Wenona, Marshall Co.; M. L. Dunlap, Champaign, Champaign Co.; O. M. Coleman, Bloomington, McLean Co.; C. C. Sturtevant, Beardstown, Cass Co.; Jonathan Huggins, Woodburn, Macoupin Co.; Chas. Kennicott, Sandoval, Marion Co.; E. S. Hull, Alton, Madison Co.; T. J. Evans, South Pass, Union Co.

Cor. Secretary.—W. C. Flagg, Moro, Madison County.

Rec. Secretary.—C. W. Murtfelt, Rockford, Winnebago Co.

Treasurer.—Chas. Dimmock, Alton, Madison Co.

Executive Committee.—G. W. Minier, Smiley Shepherd and O. B. Galusha.—*Abridged from the Country Gentleman.*

MISSOURI AND ILLS. HORTICULTURAL IMPORTING ASSOCIATION.

At a meeting of the Missouri State Horticultural Society, held on the 17th of January, at its late session, in St. Louis; Dr. E. S. Hull, was called to the chair, and W. C. Flagg, appointed Secretary; and it was unanimously *Resolved*, that we form a Horticultural Importing Association.

The following gentlemen were then elected officers for the ensuing year:

President.—E. S. Hull, Alton, Illinois.

Treasurer.—H. T. Mudd, St. Louis, Mo.

Secretary.—W. C. Flagg, Alton, Ills.

Executive Board.—E. S. Hull, Alton; W. C. Spaulding, St. Louis; H. T. Mudd, St. Louis; N. J. Colman, St. Louis; W. C. Flagg, Alton.

The following Constitution was adopted:

ARTICLE 1.—This society shall be known as the "Missouri and Illinois Horticultural Importing Association."

ART. 2.—Its object shall be, the importation of such Fruit Trees, Ornamental Trees, Plants, Stocks, Bulbs, &c., as may be ordered by its members.

ART. 3.—Any person may become a member, by the payment of one dollar, and signing this constitution.

ART. 4.—The officers shall consist of a President, Treasurer and Secretary, who, in connection with the other members, to be elected by the society, shall constitute an Executive Board, charged with the direction and control of the affairs of the society, and subject to its instructions. They shall hold their office, for one year, and until their successors are chosen.

ART. 5.—The society shall hold its annual meetings, on the Thursday after the second Tuesday in January, and the society or the Executive Board, may be called together at any time by the President.

ART. 6.—This Constitution may be amended at any meeting, by a two-thirds vote of the members present.

Quite a number of gentlemen then paid their fee, and became members.

MAINE BOARD OF AGRICULTURE.

Mr. Pratt's essay on the 'Culture of Small Fruits' was read a second time (during the reading of this paper, it was discussed by some of the members quite freely) after which

Mr. Rogers said he would like to know the best varieties of grapes for out-door growth in Maine, for general culture.

Dr. Weston—The Delaware, although small, both in the size of the berry and bunch, had proved successful in Bangor. The Hartford Prolific would grow anywhere, and ripen its fruit if judiciously cared for. The Rebecca is not so hardy as the others, but is a good berry. The ends of the shoots are apt to winter kill. The Diana has also ripened, but he could not recommend it for general cultivation; should be trained against the wall of a house on the sunny side.

Mr. Goodale remarked that the Delaware, Hartford Prolific, and Northern Muscadine were the three best grapes for out-door culture in Maine. They should be protected in winter, for they will bear so much better for it the year following. Did not think so much of the Diana as formerly, as it is subject to the dry rot. The great secret in grape growing is to procure good healthy well ripened wood, and take off three-fourths of the bunches of the fruit as soon as they are fully formed. In regard to the Old Colony grape, he said that for the extreme northern part of this State it could be recommended, as it is very hardy, and is earlier than the Delaware or Hartford Prolific.

Mr. Dill—Regards Hartford Prolific as the best he has ever grown.

The subject of the 'Application of Manures' was taken up.

Mr. Bigelow, of Somerset, was called to the chair. In using green manure he spread it on, back-furrowed, planted corn, and afterwards seeded down, and got a good crop of grass. Had obtained a large increase in his hay crop by spreading four or five cords of manure to the acre as a top-dressing.

Mr. Rogers—Had been in the habit of top-dressing for a number of years. Was satisfied it was the best method of applying manure to grass lands.

Mr. Haines—Had tried various experiments in the application of manures, and was satisfied it was better applied near the surface.

Mr. Lee applied his manure to the surface and cultivated or harrowed it in.

Mr. Jaquith applies his manure to the surface. From experiments made by some agricultural societies, it has been demonstrated that manure applied to the surface has produced the best crops of grain, of corn and of grass.

Mr. Dill thought it should be applied differently upon different soils; on light porous soils it should be plowed under; on heavy clay soils it should be applied to the surface or near it.

Mr. Dillingham of the House of Representatives, was called upon, and spoke at some length upon the subject. He had plowed in manure at the rate of 100 loads to the acre, and never received any benefit from it; and afterwards applied it near the surface—plowing the soil first and working it into the surface soil as much as practicable with an ox cultivator. In this way had received the most satisfactory results.

Mr. Rogers said his experiences and opinion corresponded with that of the gentleman last up. Believed but little manure was lost by evaporation.

[Condensed from the *Maine Farmer*.

TORONTO GARDENER'S IMPROVEMENT SOCIETY.

Pursuant to notice, given in our last issue, the above society held its annual meeting at the Board of Agriculture Rooms, on the 18th ult.

Professor Buckland delivered an able address on the "Relations of Science to Horticulture."

A very pleasing feature of our meetings, has been the exhibition of many new and rare plants, a list of which we have much pleasure in recording:—

Feb. 16.—Exhibited by Mr. G. Vair, (gardener to D. L. McPherson, Esq.,) *Azaleas*, *Ohtusa Marginata*, *Louis Napoleon*; also, "*Meyenia erecta*," a beautiful and much admired Mexican shrub.

March 16.—Exhibited by Mr. C. Young, (gardener to Judge Morrison.) A select variety of *Azaleas* and seedling *Cinerarias*, also an orchid—"*Phalenopsis grandiflora*."

May 18.—Exhibited by Mr. Turner, (gardener to Judge Harrison.) Orchids—"Oncidium papilio," *O. Warchita*, *O. Ampliatum*, *Epidendrum Cochleatum*, *Epidendrum Macrochilum*, *Cymbidium Sinensis*, *C. Alcefolium*, *Brassia Hoggii* and *Dendrobium nobile*.

June 15.—Exhibited by Mr. C. Young, (gardener to Judge Morrison.) Collection of *Carnations*, *Picotees* and *Pinks*.

August 17.—Exhibited by Mr. James Fleming. Collection of *Gladious*, *Fuchsias* and *Asters*; also, a new verbena named "*Foxhunter*." Mr. Turner showed a fine collection of *Lilliputian Dahlias*.

December 21.—Exhibited by Mr. Turner. Orchideous plants—"Barkeria elegans," *Crytochilum Maculatum*, "*Catasetum Tridentatum*," *Vanda Cœrulea* and *Epidendrum Vitellinum*; also, *Passiflora Goutterii*, *P. Decaisneana* and *Bignonia Venusta*.

Exhibited by Mr. Vair. *Camellia Alba Pleno*, *Camellia Jenny Lind*, *Celosea aurea*, *Primula Sinensis*, *Correa Brilliant*, *Acacia Dealbata*, *Epacris Semonia* and *E. Fire Ball*.—*Canada Farmer*.

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DEVOTED TO

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THOMAS MEYHAN, EDITOR.
W. G. P. BRINCKLOE, PUBLISHER.

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Hints for April.



FLOWER-GARDEN AND PLEASURE-GROUND.

As soon as the grass on the lawns commences to grow, if it has had a top-dressing of manure in the winter, whatever straw may be on should at once be cleanly raked off, and as soon as it is long enough to *take* the edge of the scythe, it should be mowed. It is of first importance that the first mowing should be done as early as possible in the season. If left to grow long before the first cutting, the leaves get yellow at the base, and at every cutting after the yellowness appears, totally destroying the fine green color which gives the lawn its chief attraction. Where a first-rate mowing is desired, it is best to roll the grass the day before cutting. The grass is then turned all one way, and cut evenly, and any dirt or stones pressed beneath the surface that would otherwise take the edge off the scythe. A good lawn-mower keeps his scythe very sharp. Some grind a little before each regular set-to at mowing. Those who are not accustomed to mowing lawns, should take but a few inches in width at a time, so as not to 'score.' With a little thought and judgment, any field-mower can soon become a good lawn hand. A sharp scythe is the chief element of success.

This is the best part of the spring, on the whole, to plant evergreens. For immediate effect, they are usually planted much thicker than they are ultimately able to occupy with advantage. In planting, take care to plant those that will finally remain first, and fill in the temporary ones after. It is not uncommon to see trees—a Norway Spruce, for instance, that will in a few years pos-

sess a diameter of thirty feet—planted perhaps but six or eight feet from the edge of a walk, and no other near to stay when the one so inconveniently close has to be removed.

All trees do better in a deep, rich soil; but for dry places, some will not do at all well. Amongst evergreens, as a rule, most of the pines will do well in dryer soils than others, the spruces in intermediate places, and the firs in more damp and sheltered spots. The firs will not, any of them, do in dry soils. The Balsam Fir, particularly, is a miserable object in a dry and exposed place, while in moist and sheltered spots it is one of the most happy looking evergreens we have.

Many evergreen shrubs supposed to be difficult of culture, are easily grown in a deep and cool soil. Rhododendrons, Kalmias, &c., do well where these conditions of growth are attended to. The former is supposed to do best in the shade; but it does better in the full sun in a good and proper soil, than in the shade in a dry spot. The fact that they grow among rocks on hill-sides, gives rise to the idea that they like a dry soil; but our experience in their native localities proves that the coolest spots on a hot summer's day is where these plants are found.

Planting of deciduous trees must now be forwarded rapidly, and, towards the end of the month, commence with the evergreens. We advocate strongly pruning or shortening the extreme points of the branches at transplanting, not only of deciduous trees, but of evergreens also. It is one of the modern 'revolutions,' to be able to speak thus of evergreen trees; the idea would have been laughed at not a half dozen years ago. Of course, there is a way to prune without injuring the symmetry or fine form of the evergreen tree, which a little practice will soon teach the amateur.

In preparing beds for flowers, it is of first importance that the soil should be *deep*. It should be dug up or subsoiled to the depth of eighteen inches at least, and a fair dressing of enriching material given them. The best kind of soil to grow flowers in is the top soil—say two inches in depth—of an

old piece of woodland. This may be mixed at the rate of about one-half with the natural soil. Where this cannot be had, some very rotten stable manure or the old sods from the surface of a common will do. It is not well to have the soil very rich, or more leaves than flowers will result.

As soon as all danger of frost is over, the border plants will have to be planted out. They should not be taken at once out of the greenhouse to the open ground. It is better to set them in a sheltered spot in their pots for a few days, until the leaves have become somewhat hardened. Before turning them out of their pots to the flower-beds, water well *first*; the soil must be pressed firmly against the balls of roots, as they are planted in the ground.

Where bedding-plants have to be bought, it is not good policy to choose tall, delicate plants, that have been forced early into growth. Select such as are green, dense and bushy, and have vigorous looking foliage. Fine leaves, at this season, is a greater sign of health than fine flowers.

Annuals are getting yearly more popular on account of their great variety, and the cheapness with which they may be obtained. A lady no more wants her flower garden to have the same look every year; here the same geraniums, there the same verbenas, and elsewhere the same patch of mignonette as she had last year—than she wants her new Spring bonnet to last forever. And to obtain this ever-changing and pleasing variety, annuals are the very things for the purpose. But they must have good soil and careful attention, or the seed will be sure to be 'bad,' a convenient term for neglect or bad practice in many instances. Very fine seeds may be sown quite on the surface, and a little moss, dried and powdered, spread thinly over the seeds. The common cause of failure is deep sowing. The nearer the surface, the better, provided they do not ever become dry—which is as fatal as deep planting. It is a happy practice that can just hit the middle way. Climbing annuals are particularly interesting. Tuberoses are best planted out as soon as all danger of frost is over, in a rich, moist, warm, sandy soil, if perfection is desired. Roots that flowered last year will not flower again for two seasons.

Bulbs that have flowered in glasses or pots in the house, if planted out into the open ground as soon as their flowers are fairly faded, and before their leaves have become seared, will, if left in the open ground till next Spring, give a small bloom again; though, of course, nothing to be compared to the imported roots.

FRUIT GARDEN.

Grafting can be continued till the buds of the trees are nearly pushed into leaf. Sometimes, from a pressure of other work, some valuable scions have been left on hand too late to work. It may be interesting to know, that if such scions are put into the ground much the same as if they were cuttings, they will keep good for six weeks or two months, by which time the bark will run freely, when the scions may be treated as buds, and will succeed just as well as buds taken from young summer shoots.

In planting dwarf Pears, it is very important to have them on a spot that has a moist subsoil, either naturally, or made so by subsoiling or mixing some material with the soil that will give out moisture in dry weather. Trees already planted on a dry gravelly-subsoil, should have a circle dug out two feet deep and two or three feet from the tree. This should be filled up with well-enriched soil. If the dwarf Pear does not grow freely, it is a sign that something is wrong. It should at once be severely pruned, so as to aid in producing a vigorous growth.

Strawberry-beds are very frequently made at this season, and though they will not bear fruit the same year, are much more certain to grow, and will produce a much better crop next year than when left till next August. Though it is a very common recommendation, we do not value a highly manured soil. It should be well trenched or subsoiled: this we consider of great value. In rich soils there is too much danger of having more leaves than fruit.

Buds that were inoculated last fall should not be forgotten, but as soon as vegetation has pushed forth, the buds should be examined, and all other issues from the old stock taken away. It may also be necessary to make a tie in order to get the young shoot of the bud to go in the way from which you would not hereafter have it depart.

Above all, do not allow the month to pass without posting yourself afresh on the various methods recommended for destroying insects, or preventing their attacks. The advantage of a stitch in time is never more decided than in the great struggle with fruit destroying insects. A mass of information on these points lies scattered through our past volumes, that will well repay a careful reperusal for the purpose alone of refurnishing ones ideas in that line.

VEGETABLE GARDEN.

Those who look with peculiar affection on the 'sour kront' barrel, must look out at once, if not already sown, for good cabbage seed. The Drum-head is the kind most generally used; but those in

the secret give a knowing wink when the Savoy is named in that connection. Purple Cape Broccoli, Autumn Cauliflower, and Red Dutch Cabbage by those who 'love' pickles, must also be sown. After all the receipts given for preserving these seeds from the Turnip fly, the best plan is to sow the seeds in a frame or box with high sides. The 'little jumper' does not seem to like to risk his limbs by a high leap, or his nasal organs may not be good—or 'what the eye does not see, the heart does not grieve for;' or for some other reason, he leaves them alone under such circumstances.

Celery, with most families, is an important crop, and should be sown about this period. A very rich moist spot, that will be shaded from the mid-day April sun, should be chosen; or a box in a frame by those who have the convenience.

Tomatoes, Egg-plants, Peppers, and similar plants, every gardener tries to get as forward as possible. South of Philadelphia they may be out unprotected by the middle of the month. Here we seldom risk them before May. The same may be said of Sugar Corn, dwarf and Lima Beans, Okra, Squash, Cucumber, and Melons.' No 'time' can be set for sowing these, except not to sow till the ground has become warm. A few warm days often makes us 'feel like gardening,' but unless the ground is warmed, the seeds will be very likely to rot. Here we sow about the first week in May. Onions for seed should be sown in rich soil, but very thickly, so as not to become larger than marbles. Very far North, where they perfect in one year, this advice, of course, is not intended. A crop of Carrots should be sown the end of April. In moist seasons the earlier crops are liable to run to seed.

Much has been written about growing Potatoes, and the plan of covering the sets with straw, leaves, or brushwood, before covering slightly with soil, is quite popular.

Early York Cabbage sown last month, or kept over the winter, must now be planted out, where there is a demand for summer greens; and to meet this want, another crop of Spinage may yet be sown.

Few things mark a well-kept garden better than an abundance of all kinds of herbs. Now is the time to make the beds. Sage, Thyme, and Lavender, grow from slips, which may be set in now precisely as if an edging of box were to be made of them. They grow very easily. Basil and Sweet Marjoram must be sown in a rich warm border.

Salsafy and Scorzonera like a damp rich soil.

GREENHOUSE PLANTS. &c.

Dahlias—one of the most popular of fall blooming flowers—should now be put into pots, all the roots being shortened to admit of its being more readily done. As soon as they sprout, they should be taken off from the old stocks, a piece of root being retained with each shoot,—by the second week in May, the time to plant out Dahlias, they will be ready. Calceolarias and Cinerarias, of all house plants, hate a dry atmosphere, and on this account it is difficult to keep them over the summer. If there be any sunk pits at hand, such as are employed for wintering plants, no better place could be found for their summer quarters. The same remarks apply to the Pansy and Daisy.

Communications.

LENDING GRACE TO EVERGREENS.

BY J. T., MOUNDVILLE, WIS.

My first winter here, mild though it was compared with such a one as this, gave me a sufficiently broad hint that if I wished to make my house snug, cosy, and home-like, it was requisite to shelter it on the North and West sides with Evergreen trees.

I planted several White Pines, all of which save one are fine thrifty trees, 15 to 20 feet high, straight as an arrow, and feathered with branches to the ground. I have usually the Hollyhock growing on the lee side of the Western trees, and agree with you that in no other situation does that fine old stately flower appear to so much advantage; but when you say "to give a summer grace to the evergreen nothing surpasses the Hollyhock," I am induced to ask you if you ever saw a young White Pine, over which two or three plants of the very common but very elegant Morning Glory had been allowed to ramble. The pine on the S. W. corner, which was the largest when planted, grew slowly at first; and as shading the stems of unthrifty trees is considered by some beneficial, it occurred to me to plant round it some seeds of the Morning Glory, which had that spring been sent to me with other flower seeds from England; the flowers proved of different colors, which added to the charm of variety: one was a white with pink stripes, one pink, one deep rose, and two were of the ordinary purple color. You may form some notion of the appearance of my pine when these flowers were in the height of their glory, hanging in garlands from branch to branch, with here and there a loose streamer waving in the air. When seen at sunrise,

in all their freshness and purity, bathed in dew, they presented a sight whose simple beauty and airy elegance would have won for it hosts of admirers, even amid the gorgeous splendors of a Chiswick show.

May not beautiful climbers of more enduring growth be united to pines of larger size and thus be led to

"invest his branch ;

Else unadorned, with many a gay festoon

And fragrant chaplet, recompensing well

The strength they borrow with the grace they lend."

Pine branches are not unfrequently used to protect tender plants during winter. You have observed the importance of even slight protection or shelter to somewhat tender fruit trees and other plants. Do you remember reading among Andrew Knight's suggestive papers, one on the beneficial effects of protecting the stems of fruit trees from frosts in early spring? He mentions that an apple tree, in a friend's garden, whose stems and larger branches were covered by evergreen trees, had borne a succession of crops of fruit, while other trees of the same kind, growing near to, but not protected, had been entirely unproductive. In the garden of another friend, a nectarine sprang accidentally from seed in a plantation of laurels; it bore as a standard three successive crops of fruit; the owner thinking he had got an extremely hardy, and therefore valuable variety, thinking to promote its growth and health, cut away the laurel branches which sheltered it; but the result was simply an end to its fruiting. A plant of the tender China Rose and of the Irish Ivy were planted together by Mr. Knight at the foot of a wall; in time both grew considerably above the top of the wall, which was 12 feet high, and the rose, whose stem was covered by the ivy, "annually produced more abundant flowers, and exhibited symptoms of more luxuriant health than any other rose of the same kind in his possession."

Now as sheltering walls are out of the question with most of us here, supposing an amateur, animated with the true amateur spirit, desirous, not only to grow ordinary things extraordinary well, but to grow fruits of great excellence and flowers of rare beauty, which are considered somewhat too tender or too difficult of culture to be "recommended for general cultivation," should have growing in his garden an isolated White Pine or other suitable evergreen, which, after the first two or three years of its life, had extended its leaders about two feet each year, so that its shoots or branches may be at a good distance apart, is it not probable that by the aid of the shelter afforded by the pine, he might,

in a somewhat adverse climate, be able to grow that noble climber the Chinese Wistaria, or Bignonia radicans, and even vigorous growing varieties of the rose, clematis, &c. By shelter I mean that the main stem of the climber shall be trained up the main stem of the pine, and that lateral branches of the climber shall be induced to grow along the lateral branches of the pine. The Wistaria thus grown and well managed, if it is possible to keep it up in order within the limits of a pine tree, could not fail to be otherwise than exceedingly beautiful.

If orchards in these States on the wrong side of the great lakes, were sheltered by evergreens on the North and West sides, as I am persuaded they should be to insure the highest success in fruit culture, the inside row of pines of the North belt might be made useful as well as ornamental, by training a grape vine up each. This you will consider a very primitive mode of growing the grape; old as Adam and Eve, if Milton may be considered any authority in the matter,—unperplexed by a multiplicity of rival systems,

"they led the vine

To wed her Elm; she pous'd about him twines

Her marriageable arms, and with her brings

Her dower, th' adopted clusters, to adorn

His barren leaves."

It is a common remark that vines which have been allowed to ramble at will over trees, are usually healthy and bear well. If a suitable border was prepared on the south side of a row of pines, and the leading shoot of such vine planted therein was layered in the way recommended by Grant in the Thomery system of grape culture, till the pine was reached, we might probably, owing to the greater height from the ground of the bearing branches, and to the shelter afforded by the pine, obtain ripe grapes in some seasons, when those on trellises or stakes in the open ground would be immature, owing to the foliage being destroyed by early frosts.

It is rare to see a farm house or orchard hereabouts sheltered by trees planted for that purpose. Are you Nurserymen wholly blameless in this matter? On looking over the advertising pages of the February and March numbers of last year, I find evergreens offered in large quantities, at very low rates. In two or three retail catalogues I have, the price of single plants only is stated. For a nice thrifty pine or spruce, furnished with a mass of fibrous roots by frequent transplanting, and which is wanted to dot here and there about the house, and be grown as a specimen plant, 50 cents or thereaway, as is usually charged, is none too much; but it seems the wrong way about to give three or four

times as much for a plant to protect, as for a plant to be protected; much more for a common forest tree than for the choicest fruit tree. What is wanted, or rather what I as an amateur feel I want, is nursery raised evergreens, on which less labor has been bestowed, less land occupied by them and sold much younger, so that the nurseryman may more quickly get a return for the money and labor expended in their production, and therefore be enabled to sell with profit in moderate quantities at low prices. Why then not state briefly in your catalogues the utility and necessity of shelter to houses and orchards, the plants best suited for the purpose, with some hints about preparation of soil, planting and after management; then state the size or age of your plants, and how much for 25, 50 or 100. This, I think, would help matters some, but in the Western States especially, State and County Agricultural Societies should take the matter in hand.

In old European countries, it is found expedient to offer premiums to induce a man to grub up old and crooked fences, which it was obviously for his interest to do. May not the offer of premiums induce men here to plant evergreens about their houses and orchards, which would add so much to individual comfort, to success in fruit-growing, and tend so much to beautify and adorn the country.

NOTES ON THE MELON.

BY S. F. T.

On a hot day, in summer or the early autumn, there is no fruit more refreshing than a ripe juicy water-melon. Not so rich and luscious, perhaps, as the peach, yet for its refreshing qualities, not surpassed by any other fruit. The water-melon is, therefore, held in universal esteem, and there are few persons, in this part of Eastern Pennsylvania, who do not plant a few hills every year. Ever since I was able to plant at all, at each returning season, the water-melon was not forgotten, and this, always in the face of universal failures. Except, when a tough sod in some rich meadow bank was turned under, so far as I have seen, our farmers all had the same result—a very poor crop of little half-starved melons, than a Jerseyman would not think of eating. I have often thought that this fruit, loved as it is by every one, should not be passed by, with the little notice that it receives in the journals, and I have often thought too, that some successful Jerseyman, (and it is said, they all succeed) should give us occasional notes on the subject, in relation to the culture—new varieties

and other facts, as they become known; but have looked in vain. Surely there is great room for the observation and experience of successful cultivators of this fruit.

Not deterred by such a universal want of success, I never fail to keep up the custom of planting a few melon hills; this year, however, with such good success, that I feel tempted to give the readers of the *Monthly*, with the Editor's permission, my mode of cultivation pretty fully.

It has been long known that a rich meadow bank turned under, seldom fails to produce a good crop of melons. But, unfortunately, all of us do not have such favored spots, or if we do, they are so remote from the dwelling that the tempted fruit becomes a prey to melon thieves.

My own soil is a gravelly loam, much inclined to bake in the spring, and is, therefore, unsuitable for melon culture, but, notwithstanding this, proper care will bring the melons. An early start is essential here, even if they should require some protection at first; and in this case, a small shallow bore, three or four inches deep, without top or bottom, and a pane of glass laid over the top, answers a good purpose.

In making the hills, which should be not less than eight feet apart, dig out a hole, eight or ten inches deep, by two feet across, throwing the sub-soil away. Into this, place one or two good forkful of fresh manure from the horse stables, and on this, place the soil which should be enriched by adding or mixing with it some wood mould; the hills should be raised a few inches, and made flat on top when the seeds may be planted. Care in selecting of seeds will always pay. My plan has been to save the seeds of the best melons of the previous year. Plant in each hill 12 or 15 seeds, and as the plants grow, and are fairly out of the reach of insects and other pests, reduce to about three. The young plants need careful attention, and must be kept thrifty by very frequent hoeing, and, if the season be dry, watering. Weekly applications of liquid manure answer a good purpose.

If the plants are not kept thrifty and growing, but on the contrary seem to stand, they soon dry up.

As the season advances, at each hoeing draw up the dirt a little, this increases the diameter of the hill, and making it a little concave on the top, so as to keep the rains from flowing away. Wet seasons this is not, perhaps, necessary. In a few weeks, if the ground has been kept well stirred and watered when dry, the vines will have covered the ground,

and they will require little further attention, except an occasional weeding. Still I keep up the hoeing as long as I can move the vines about, out of the way of the hoe, without injury, but as the tendrils will soon attach themselves to anything within reach, they can then be no longer removed, and the let alone policy will be the best.

The next difficulty is, to know just when the fruit is ripe, and this can be readily ascertained by taking a melon between the hands and applying a little pressure, when if a faint cracking is heard, the fruit is ripe. If then laid in a cool cellar, a day or so, it will be in good condition for eating.

The same treatment applied to the Canteloupe, will seldom fail to produce a bountiful return.

This fine fruit is more successfully raised here, than the water-melon. The hills may be six feet apart, and the fruit is ripe when it leaves the vine by a very slight pull. A small variety called Jenny Lind, is good enough, with a long kind which I received as the Cassabar Melon, is one of the greatest acquisitions of the past few years. They are about as good as the first named, but are very large.

One of these, raised last season, measured one yard in circumference.

This article is, perhaps, long enough to tire the patience of many of your readers, and I will conclude with a short chapter on *hoeing made easy*.

Ordinarily hoeing is a toilsome work, but with a little light implement, such as I procured of Rogers & Gest, Market Street, Philadelphia, hoeing is easy and pleasant. This very light and most effective hoe has five prongs on the back like a rake, while the cutting blade, on the other side, is a light piece of steel, one inch wide, by five or six long. With this instrument I can go over my melon patch in the morning before breakfast, and the flower beds, which are quite extensive, are kept in order with comparative ease by myself.

Some years since, a hoe like this, without the blade, was described in the *Monthly*. Will the editor be so good as to give the exact pattern and size, with any improvements that have been added since? If any better than the first, I would like to have some.

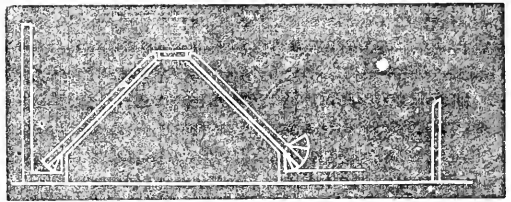
[See answer in another column.—ED.]

FORCING PRINCIPALLY BY SUN-HEAT.

JAMES WEED, MUSCATINE, IOWA.

To produce choice fruits with certainty and cheaply, has always been regarded as an object worthy of the best minds in horticulture, and engaged the highest genius and skill of practical gardeners.

The following illustrations are designed to show the application of substantial and efficient shutters for forcing-pits, or other glazed structures:

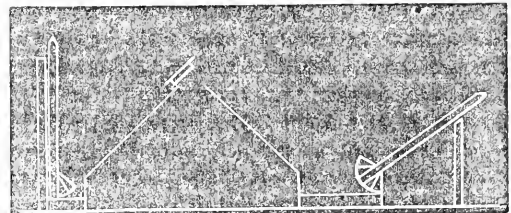


NO. I.—CROSS SECTION, CLOSED.

The house may be supposed to be fourteen feet wide, eight high, with rafters eight feet long.

The shutters ten feet high, and eight or ten inches thick, should enclose, in their construction, a perfectly shut air-chamber, and close tightly over the glazed structure, as shown in the first cut.

The house should extend east and west, and the north shutter, when opened to a perpendicular position, is fastened to substantial posts, and thus forms a back wall eleven feet high, the rocker-rails being one foot from the ground, which should be mulched with a suitable covering one or two feet thick. The south shutter is, when open, also attached to posts, and turned over sufficiently to admit the full action of the sun's rays upon the house, as represented in the second cut. The base of the shutters, below the center of the circle, is weighted with sand or other suitable material, until they are balanced on the centers, when they may be opened or closed with the greatest ease and facility. The ends of the house are closed with similar shutters.



NO. II.—SAME, WITH SHUTTERS REMOVED, EXPOSING THE GLASS TO THE SUN.

The objects sought to be obtained by this mode, are, so to enclose and protect the house that the temperature may be suffered to decline naturally during the night, without endangering the plants—to economize fuel, simplify the management, and lessen the cost of heating apparatus.

Writers on the subject of forcing, all agree that the injuries resulting to plants from high night-temperature, which is unavoidable in severe climates, subject to extreme vicissitudes and sudden changes, are among the most serious and difficult to obviate. We advise to "leave on a little air all

night," with so many cautions and counter-instructions, which, put together, amount to just as little as possible in the very coldest weather, when the greatest fire-heat is required, and, consequently, the most ventilation needed.

To apply this house to the purpose of forcing the peach economically, put up the frame and shutters, and plant the trees in the border at the base of suitable trellises, and after training the first season, close the shutters over them until the next spring. Continue the training, and allow a few specimens of fruit; in the fall again enclose for the winter, and the third summer a moderate crop may be realized. Thus we secure a perfect condition in the trees, and raise "peaches without glass." As soon as the trellises are filled and the trees in condition for a full crop, and for forcing, cover the frame with hot-bed sash, and when desirable to start the trees, open the shutters daily to the sun, and close up securely at night. A common stove and pipe, or simple flues, will be necessary in cold, cloudy weather, and in extremely cold nights; but there are many warm days in winter when the sun would afford all the heat wanted.

The following directions, from the *Gardener's Chronicle*, for the management of peach trees in pots, indicate that the peach requires much less heat in forcing than the grape:

"The trees started in December, should be commenced with the temperature of about 40° by night and 45° by day. After the first fortnight, the temperature should rise to 45° by night and 50° by day, with an increase of about 10° with sun heat. At the end of another fortnight, the temperature should rise to about 50° by night and 55° by day. The night temperature should not exceed this until after the fruit is set. This is the rock on which so many beginners suffer shipwreck. They forget that the peach must be flowered under a comparatively low degree of temperature; they are frightened to give air, especially if the weather be cold and frosty; they keep a close, warm atmosphere, and the results are, that the petals all drop off without any fruit setting. Whilst peach trees are in blossom, air must be admitted abundantly by day, and a little also at night; precautions must of course be taken in severe weather, to place some material over the openings, to break the cold draughts of air. So long as the temperature is kept above 35°, the blossoms are safe, but only keep a close atmosphere and a high temperature, and there is a certain end to the crop. This is a point which cannot be too much insisted on, as every thing, as regards the crop, depends on it.

By admitting plenty of air, and keeping a night temperature of from 45° to 50°, if the wood was, previous to forcing, well ripened, a much greater quantity of fruit will set than is ever needed to remain for a crop. When the fruit is all set, and about the size of large peas, the temperature should be raised to about 55 to 60° by night, and 65° by day, with an increase, by sun heat, of 10°. Air should be freely admitted. The night temperature should not exceed 60°, until the 'stoning' is over; for this is a very critical period in peach-forcing. After this, the temperature should be raised to 65° by night, and 70° by day. Peach trees will stand a high temperature after this. When the fruit is approaching maturity, which, when the trees are started in December, and the foregoing treatment attended to, will be about the beginning of June, it should have all the exposure to light and air possible. Trees treated thus will be in the best possible condition for forcing the next season. The above mode of treatment will apply to the trees started at any subsequent period; and to have a succession of fruit, a fresh batch should be started every three or four weeks."

If trees are started the last of January, instead of December, in this climate, the average temperature, from sun heat, will increase after the first month, in something like the proportion required.

When under this system of pot culture in orchard-houses, in this country, it is recommended to remove the trees to the open grounds, we remove the sash from the house, and use the shutters, if occasion requires.

The advantages of planting directly in the border, are aimed to be contrasted with pot culture, in the following quotation from the above authority, in 1862:

"GLASS HOUSES FOR FRUITS.—I am sure that all gardeners must bear testimony to the great stimulus which 'T. R.' has given this particular branch of horticulture, and to the indomitable perseverance with which he has continued to fight for a number of years for his 'orchard houses,' and for his peaches and nectarines 'in pots.' 'A look into their roots,' he says, 'is like a look into the book of Nature, most valuable to a reflective mind.' I accept the cultivation of fruit-trees in pots exactly in this sense. But as a matter of *2 s. d.*, and of supply, I must leave my potted pets to keep company with my geraniums and orange trees, where, as objects of beauty, they shall have my attention still. That fruits of all kinds can be grown in pots, there can be no doubt; but when a constant and substantial supply is required

for table or for market, of the finest quality and in the greatest quantity, then there is no question that you must decidedly plant out. If my opinion is worth anything, I recommend glass houses of the highest possible construction, and trees planted out for supply. In this way, there will be no disappointment, and if you wish to grow in pots, let it be understood that it is for the pleasure which such a fancy conveys, and not for profit."

That the peach and all other choice fruits can be grown on trellises, trained as espaliers, to great advantage in many respects, and in substantial quantities for market purposes, there can be no doubt, and it is believed the product of espalier-trees will pay good interest on the investment required, embracing the cost of shutters for preventing injury to the trees, or their blossoms, from autumn, winter or spring frosts, even in seasons when it has to compete with local crops in the open ground—the early varieties being thus carefully grown and sheltered may be easily marketed, say ten days before the product of open culture, and in seasons of failure, from any of the common casualties, a reimbursement of the whole capital invested may soon be realized, and when we add the advantage of the practicability of forcing these fruits, and bringing to market full crops, at a season when they always command very high prices, with but little more than the simple cost of a glazed covering, the system appears worthy of the capital of commercial fruit-growers, and the enthusiasm of amateurs.

THE WALL-FLOWER.

BY SWIFT, DELAWARE.

The wall-flower has long been a favorite of mine, not that there is any especial beauty in the plant itself; the delicious sweetness of its flowers, the season of its blooming, its habit of growing on old walls and ruins, "above the wrecks of time;" its very name endears it to those who have seen it growing in its native habitat, and gathered the yellow petals, where once echoed the song of revelry. There may be nothing new in what I am going to say, in regard to its cultivation, still I cannot resist the impulse to plead in its favor.

The Wall-flower is a plant of easy growth, requiring to be kept cool. A half shady place in the border, is just the thing for it, during our hot, dry summer weather. The fragrance of its flowers alone, will compensate for all the pains bestowed on its cultivation. Although not perfectly hardy, it can be protected so easily, that no garden, however small, ought to be without this sweet-scented, spring-flowering plant.

The single flowering kinds are best raised from seed, sown in spring, either in a box or in the open ground; when two or three inches high, plant them in beds made for that purpose. The double varieties are increased by cuttings, which root readily in pots or pans filled with sandy soil, when taken off the young wood, just before bursting into bloom, to be afterwards treated similarly to those raised from seed. They require no further care, except weeding, and when fall comes there will be a fine lot of plants for flowering in spring. On the approach of hard freezing weather, lift all the plants, select some dry sheltered spot, and heel them in, covering them at the same time with half-flour barrels; there remain until spring, or, if there be cold frames convenient, and to spare, heel them in there close together, but be sure and take off the sash on mild, sunny days; otherwise the plants would damp off. When spring arrives, plant them in a bed near the parlor window, leaving room between each plant, for heliotrope, which will be a mass of bloom, when the Wall-flower is—*passé*.

PENNSYLVANIA HORTICULTURAL SOCIETY.

DISCUSSIONAL MEETING, FEB. 2, 1864.

President Fairman Rogers in the chair.

Mr. J. Daniels presented the following essay, on
"HEATING OF GLASS HOUSES."

In commencing, allow me to make a few preliminary remarks:

Waiving all consideration of the theories which philosophers have advanced, regarding the nature and properties of heat; let it be our task to consider its application for horticultural purposes.

As man advances in civilization and luxury, artificial heat becomes necessary to him; first, for warming his dwelling, and afterwards to produce those exotic rarities for his table, which his native climate had denied him. For this latter purpose, heat has been employed for ages, but true it is, that until within a very recent date, it has been in many cases applied upon the most unphilosophical principles. Not only in respect of the production of an unhealthy atmosphere and uncertain temperature, but also as regards the consumption of an unnecessary quantity of fuel. Nor are the opposite results all the advantages which modern improvement has made in this case. Economy, neatness and order have taken the place of filth, waste and confusion.

As healthy an atmosphere is now produced in all well regulated hot-houses, as there is in the open

air, and instead of difficulties presenting themselves, in heating a moderate sized house, we find none now in heating an entire garden, whatever may be its extent.

In preparing these few lines we have had to consult several works of merit, in which, heating, so far as regards our present subject, is treated of; and have examined a number of different modes of applying heat by combustion, personally.

We find the most primitive mode of heating was that employed by the Dutch, as early as the beginning of the sixteenth century, for we find at that period, their gardens contained many of the plants of the East Indies. It consisted of the common stove of the country, placed at one end of the hot-house, inside; the smoke and heated air being carried along the front or middle in earthenware pipes or tubes, about ten inches in diameter, and smaller at one end than the other, so as to admit the end of the one entering that of the next.

Another mode of heating was adopted, and is said to have been carried out within a very recent period, that was by a small iron wagon mounted on wheels, and filled with burning charcoal, which was drawn backwards and forwards through the house in severe weather. This we should think a very dangerous mode of heating.

Brick flues constituted the next step towards an improved mode of heating, and those first used were merely drains, built under ground.

These were followed by the broad and deep flues of the Dutch, built on the surface but not separate from it; these are in very general use still throughout some parts of Europe.

The detached brick flue, adopted about the end of the last century, was a decided improvement on the former, and is pretty general in use at the present time. These, it is said, if well built and properly managed, have their advantages, they being somewhat less expensive than the steam or hot water pipes.

Heating by hot air stoves was thought at the time to be a great improvement on the former mode, but Mr. Nicol, who had experimented more than any man of his day upon them, has declared them worse than useless.

Heating by steam appears to be the next improvement in heating Glass Houses, but that now being so completely superseded by hot water, that our observations or remarks need only be brief; suffice it to say, that it being more costly than hot water arrangements, also requiring a more experienced person to manage.

Hood, in his excellent Treatise on Heating, very

properly remarks: "As the power of iron to decompose water increases with the temperature, the limit to which the temperature of any metallic surface ought to be raised, which is used for radiating heat for the warming of Glass Houses, should not much, if at all, exceed 212° , if the preservation of health is the matter of moment. The importance of this rule cannot be too strongly insisted on; it ought to be the fundamental principle of every plan; for upon it depends the wholesomeness of every system of artificial heat.

As the heat in hot water pipes, rarely exceeds 180° or 200° , the decomposition of water by that heat is immaterial, compared to that produced by steam, which is seldom under from 220 to 230° , and infinitely less than that by heated air, which frequently have to pass over metallic bodies, red hot, as is often the case when hot air stoves are employed."

HEATING BY FLUES.

Having before remarked on flues generally, we shall now proceed to consider a few varieties individually.

Earthenware or can flues—it has been already observed, that these are of various kinds, the most primitive being tubes made of brick clay, tapering at one end, so as to join more readily with each other; they are usually about 2 feet in length and 10 inches in diameter.

FIRE CLAY FLUES.

With spigot and faucet joints. These are a great improvement on the last named, as being stronger, less liable to warp or crack in burning, having a much neater appearance—they can also be jointed so as to prevent the escape of gaseous matter—in some cases have been used as an economical substitute for iron pipes for circulating hot water.

The modifications of fire clay flues are the square, egg-shaped, round and round-topped, very excellent improvements, both in strength and appearance, and all seem to have their advocates.

The common or detached flue. This was the first real improvement in flue building. Flues of this description vary in dimensions, from 9 to 12 inches in width, and from 12 to 18 inches in height. They are built of regular and well formed bricks placed on edge, but where great and constant heat is required, they should be laid flat, being thus much stronger. They need to be neatly jointed with well prepared mortar; it ought to be raised from 4 to 6 inches above the floor of the house: this is for the purpose of keeping the flue fire from damp, which would have a tendency to cool the air in it, and to obstruct the draught or current of smoke and heat, which

are both lighter than cold and particularly damp air, as well as of preventing the loss of heat by absorption.

The heating capabilities of flues, have been variously estimated; but as much depends on the construction of the house to be heated, mode of glazing, &c.—no correct data can be laid down, either for this or any other mode of heating.

HEATING BY HOT WATER.

An invention so important as that of heating by the circulation of hot water, soon became extremely popular, and, as a natural consequence, men of science turned their attention to the subject.

We find that Mr. Atkinson's system was the first that was exemplified in a perfect state; it may be termed the horizontal mode, as the water was made to flow from the boiler to the reservoir or turn of the pipes upon a perfect level, and however far most of the others have essentially differed from it, in some feature or other, still the principle remains unchanged.

Heating by hot-water pipes, tanks or gutters, in all their modifications, is a most decided improvement on the old system for horticultural purposes. It has many advantages over steam, because by it a sufficient and more uniform temperature can be maintained at less expense, and with no danger.

BOILERS AND PIPES.

Of boilers, there is now a great variety. As it is in form that these principally differ from each other, we may here observe that that form is most certainly the most perfect, which presents the greatest extent of surface to the action of the fire, either at bottom, through the centre, or over the sides, whether caused by corrugation or projections, either inside or out; holding the smallest quantity of water necessary, causing a quicker circulation. But, at the same time, complicated forms should be avoided. Copper, zinc, wrought and cast iron, and in some cases, lead and earthenware boilers, have been recommended,—of these, we should prefer the cast iron, as being the strongest and less liable to corrosion than wrought iron. The metal requires to be of the best quality, and carefully cast, so as to be of equal thickness throughout, else they are liable to crack upon fire being applied to them for the first time, on account of the inequality of expansion, and for this purpose they should be gradually heated when first subjected to the fire.

Another, and one of the most important points to be understood and acted upon, in the arrangement of a hot water apparatus, is the proper setting of the boiler; if that is not properly attended to,

the best apparatus will be a failure. Whereas, badly designed boilers, when well set, often answers beyond expectation.

It is a great desideratum with good gardeners, as far, at least, as my acquaintance goes, to get up a heat in a short time, and their ordinary test of the excellence of a hot-water apparatus is, how speedily they can get the water to circulate. Where an apparatus is properly constructed, this can seldom be effected without a most extravagant waste of fuel. If a house is to be heated rapidly, the pipes should be of the smallest diameter, which is consistent with a free circulation, but it must be borne in mind, that small pipes will cool with equal rapidity. But we do hold, that small pipes, say 1 inch in diameter, will convey heat away from the boiler much faster than larger size, say 4 inches. As the circulation in the former, being sixteen times as fast as the latter, caused by the heat thrown off so much more rapid, thereby returning to the boiler at a much lower temperature,—it is well known the colder the water returns to the boiler the quicker the circulation.

Nor is this all the advantage, we think, in using small pipes, and especially in the form of economy; as we said before, that if they are cooled quicker, they are heated quicker, and that with the same radiating surface, with much less fuel, for instance, four 1 inch pipes have quite as much radiating surface as one 4 inch pipe, and we do hold, will throw off as much heat, the former requiring only one-fourth as much water as the latter, it therefore only ought to require one-fourth the quantity of fuel.

We have tried a number of experiments, with small pipes, and with all, and we are still of the opinion that small pipes, for moderate sized glass-houses, are by far the most economical.

GROWING THE LIMA BEAN IN BEDS.

BY "CHESTER CO." PA.

I do not know whether to feel mad or merry at the remarks of 'Dauphin County,' on the Lima bean. He might have said, all he did say, in favor of vegetable culture, without the extra fling at fruits and flowers. I think no less of a good vegetable than he does—would go so far, as to admit, that a gardener should understand, first and foremost, vegetable growing before all, but not at the expense of flowers or fruit either.

Not feeling in the best of humor with him, I take a malicious pleasure in telling him his great trouble about poles and poling, is all nonsense—and it astonishes me that this antiquated plan of

bean growing has not long ago departed this life. My plan is much more simple.

I lay off my Lima Bean ground into beds, as to plant asparagus—about four feet wide, leaving about a foot of space between the beds. I then draw a deep drill with a hoe right across the bed, fill in with good rich manure, and then draw over the soil on each side, forming a steep ridge four feet long—every ten feet, this operation is repeated across the bed, and the beans are sown about six inches apart on the top of the ridge,—I have then six or eight plants on each four feet ridge. As soon as the vines are well above ground, brushwood or pea sticks are laid on the ground thickly between the ridges, covering the whole ground, and the vines soon begin to run along the brush. By August the beds are covered with green vines, and the beans soon follow.

I think, by my plan, I can get more beans to the acre by a long way, and a plaguy sight earlier bean, than your Dauphin County friend, with all his trouble and fights with his girls, and in the friendliest of spirits possible, propose to send you a half bushel of beans, against a similar quantity from him, purely with the view of your deciding which plan will bring the earliest beans. I suppose there will be little difference in the earliness of the season between this and 'Dauphin Co.'

[The bean question is growing interesting. We have not heard of this mode of growing beans before, and should imagine there would be less space to grow the beans on the ground, than when on poles; but perhaps the extra productiveness makes the difference.]

BIENNIAL FLOWERING PLANTS.

BY WALTER ELDER, PHILAD'A, PA.

This is a beautiful class of plants, and many of them are very fragrant, and are also of simple culture. Many of the varieties and sub-varieties are wonderful improvements compared with their original species.

Althea sinensis, (Hollyhock) with its single blooms, was almost banished from culture, but has returned with very rich, double blooms of all shades, and is now a great ornament to the Pleasure-grounds.

Antirrhinum has so many improved varieties, that one is apt to exclaim, how much further will improvements go to reach perfection?

Aquilegia, (Columbine) has very many new, improved varieties; far transcending in loveliness the fondest wishes of their originators.

Campanula, Canterbury bell, has also, very many improved varieties; they bloom twice the size of the old species—they are of far brighter colors and of various hues—deep blue, light blue, pure white, yellowish white, &c.

Digitalis purpurea, (Foxglove) have many superior varieties of different colors, and bloom thrice the size of the species.

Dianthus, is of a very numerous and highly improved family. The Carnation pink has been a favorite for generations; how much more should it be now with the many superior varieties? and many of them keep in constant bloom all the growing season. The Picotees are also much improved.

Sweet William was always a favorite, and is much more now, with the wonderful varieties, both of double and single blooms. Many as large as small roses and of dazzling colors.

China pink is very numerous in varieties of surpassing beauty, of almost every shade, and many forms and sizes. They all bloom the year they are sowed, but far more profusely the following year; the *Heddeewigi* is peculiarly superb in all its sub-varieties.

Mule pink has, also, many improved varieties, and highly deserving good culture.

Hesperis, (Sweet Rocket) has many new varieties, and many of their blooms are as large and double as Daisys, and remarkably showy.

Wall-flower—the blooms of many of the new kinds are as large and double as Small Carnation pinks, and all delightfully fragrant.

Gilly-flower has also very many improved new varieties, and all, of the sweetest perfume. No one could pass by a bed of wall-flowers, or a bed of Gilly-flowers, without being enamored with the beauties and sweet odors. And no one could pass any of the other Biennials, above named, without being struck with their amazing lovely blooms.

They may be all sown in April or May, and transplanted into nursery beds a foot apart each way, in June or July; and they will be large plants in fall. Those that bloom the same year should have the flowers cut off where they fade; if left to bear seeds their growth would be so checked as to injure their flowering the next year. They may all be left in the nursery beds until early in spring, and lifted with balls of earth at their roots, and then planted in the flower beds and borders; then arrange them so as to make a pleasing contrast of colors. When they bloom their flowers should be cut off as they fade, and they will branch out and bloom a second time, and some will bloom all the season. Any one wishing pleasure in their flowering plants,

should never let them bear seeds, as by that, half the pleasure is lost.

Antirrhinums, Carnations, Wall-flowers and Gilly-flowers, need more protection in winter than any of the others. Frames may be made with four boards nailed together at the corners, and set on the beds where they are growing, and covered in cold weather with lids or shutters made of boards. Indeed they are well worthy of having shallow hot-bed frames, with glass sashes and shutters, over them in very cold weather; they will well repay that small care. Although all the others are hardy, yet they are benefited by a slight covering of tree leaves or clean straw, from December till the middle of March. Bean poles or pea sticks may be put on top of the leaves or straw, to prevent them being blown off by high winds. An annual bloom of Biennials can be kept up by sowing seeds every year, and manage them as above directed. If people could see the new and improved varieties, they would not hesitate a moment to purchase seeds and sow them. Their matchless beauties and sweet odors, cannot be described in a short article in a magazine; it would occupy several pages to describe any one species. They must be seen to be admired, as no language can paint their various forms, hues, sweet odors and wonderful markings.

FURNACES INSIDE GREENHOUSES.

BY J. M.

I was as much interested in perusing the two articles in the February number of the *Monthly*, on the Furnace question, as I have been, since the opening of the subject by you, some time ago. Mr. Pennock's plan, as he states it, although doing away partly with dust inside, would not, I think, be so well, as having the Furnace outside. The trap door, he speaks of, as allowing the heat to ascend when open, would have, I think, the opposite effect; and he would find his plants the worse for the change, as the cold air passing down to the fire would keep the plants above almost frozen in cold weather. I have had a house, with the furnace inside, under my care this winter; the length of it, is about 45 feet. I have seen, on cold nights, the plants, a foot or so from the furnace, frozen quite hard, owing to the cold draft, whilst the remainder of the house would be from 45 to 50° above Zero. I find it necessary in winter, to put plants, that are nearly hardy, on this particular shelf, it being the coldest place in the house. The space he speaks of, as being between the furnace and the wall of the greenhouse, I quite agree with him in

having, as where it is built in to the wall, the loss of heat is enormous. The fireplace I would build outside, the mouth of furnace in wall of the greenhouse. Among the advantages of the outside system, would, I think, be found the following: more heat; more space for plants, as when inside, the place over the furnace is almost useless; and a house free from dust, coal or wood necessary for fire. In fact, I do not know of one good point in the inside system, while the disadvantages are obvious. The fire-brick flue pipe, your other correspondent speaks of, I have to add my testimony to its superiority over the brick-flue, and get double the heat from the same fire, the brick flue would take. I have heard persons express dislike for the pipes, on account of their cooling off faster than the brick flue, the pipes not being of the thickness of brick. This objection, I think, hardly admissible, as I am sure no good gardener leaves his fire in cold weather, with any doubt on his mind, as to the possibility of its keeping alight till he returns.

ON THE CULTURE OF THE OFFICIAL RHUEARB.

BY J. STAUFFER, LANCASTER, PA.

There are, at least six species of the Rhubarb, the roots of all of which, possess medicinal properties.

There are two sorts of rhubarb imported into this country, Chinese and Turkey Rhubarb, differing in quality; although they both come from the same country. Nearly all the Rhubarb of commerce, is brought from China; it grows near the source of the river Chorio. The *R. undulatum* and *R. palmatum*, are both official.

The *R. rhaponicum*, or Pie Rhubarb, well known, and extensively cultivated for its stout acid petioles, used as a substitute for fruit in early spring. The Persians have for a long period been in the habit of using them for this purpose.

And, as the official plant, the *R. palmatum*, is of as easy culture, there is no reason why this valuable drug should not be raised in our own country. I am aware that there is a prejudice in favor of foreign roots, but this is no reason to discourage the home growth, and only needs the requisite knowledge to make it a complete success; it is my object to give this, as some one of your numerous readers may profit by it, and do his state a service.

The first object to be attended, is to get the genuine seed. "It is sown in spring in a light soil, and transplanted next spring, into a similar soil

well trenched, the plants being set at a distance of three feet apart each way, from each other. The third year some plants begin to flower; but the roots are not lifted till the autumn of the sixth year. When dug out of the ground, they are first to be washed in a large quantity of water; and after the fibres and small roots are cut off, they are well brushed in fresh water, and cut into pieces of a proper size.

The brown bark is then washed off, and they are again thrown in fresh water for three or four hours, in which they give out a great quantity of gummy matter.

They are then taken out and laid upon twigs to drip till next morning: and it is chiefly in this time that they exude at every part, a white, transparent, gummy matter, resembling jelly. They are lastly placed in a stove, heated to 120° or 140° till they dry.

Twenty-five pounds of the recent root, yield only about eight pounds of the dry. It is not, however, yet fit for sale. All the wrinkles must be rasped and filed out, and the pieces thus dressed, put in a barrel, fixed on an axis, and rolled about in it for about half an hour, when they get covered with a fine powder, formed by their rubbing against each other."

"Prepared in this way, it may be powdered, and has in every respect the appearance of foreign rhubarb." (*Rhind's Vegetable Kingdom.*)

British Rhubarb is cultivated in considerable quantities in the neighborhood of Edinburgh, and sold at nearly the price of the Turkey Rhubarb.

According to Baume, the roots cannot be reduced to powder, even when perfectly dry, if the roots are not previously steeped in water to extract the gum or mucilage. It is, nevertheless, easily reduced to powder if merely washed and peeled, before it is cut into proper pieces, and dried upon the top of a baker's oven.

In order to distinguish the *Rheum palmatum*, it may be well to append a brief description:

The stalk is erect, round, hollow, jointed, sheathed, and rises to the height of 6 to 8 feet. The radical leaves are numerous, large, rough, of a roundish figure, and deeply cut into lobes, and irregular pointed segments. The stalk leaves spring from the joints, which they supply with membranous sheaths. The flowers terminate the branches in numerous clusters, forming a kind of spike, appearing in the latter part of May or in April. The flowers are like those of the Pie Rhubarb, of a greenish white color.

The root is perennial, thick, of an oval shape,

and sends off long tapering branches; externally it is brown, and internally of a deep yellow color.

The Rhubarb, Dock, Sorrel, &c., belong to the natural order of Polygonaceæ (the Buckwheat family,) herbs with alternate leaves, remarkable for their stipules, of which both margins are united forming a sheath around the stem, just above the leaf of a membranaceous texture, termed *ocleræ*. Dr. Gray says, in his text book, pp. 463, ed. 1850, most species of Rhubarb are purgative: "but it is not yet known what particular species of Tartary yields the genniné official article."

Dr. Hope read an article, before the Royal Society of London, giving an account of the *R. palmatum*, which grew in the Botanical Garden, at Edinburgh, and says, "From the perfect similarity of the root, with the best foreign Rhubarb, in taste, smell, color and purgative qualities; we cannot doubt of our being, at last, possessed of the plant which produces the true Rhubarb; and may reasonably entertain the agreeable expectations of its proving a very important acquisition to Britain," and why not to the United States?

ORNITHOLOGUM AUREUM.

BY W., WASHINGTON HEIGHTS, N. Y.

I presume you and many of your readers are acquainted with the bulb *Ornithologum aureum*. I believe I have known it for the past 20 years, or more, and it strikes me very forcibly that it used to bloom every spring, the same as *Ixias Lachenaïas*, etc. Now if this is so, which I believe it is, these bulbs of mine have been jilting me for the last eight years, *i. e.* they have refused to grow at all, or flower *every other year*, for that space of time. Last year every bulb bloomed beautifully. This winter they are perfectly dormant, but fresh and plump; and so it has been every alternate year. Please inform me, if you can, how to wake them from their slumbers.

[We have never noticed the peculiarity, "W." refers to and insert the inquiry as received, hoping to hear from those of our friends who may have seen similar freaks.—ED.]



The Gardener's Monthly.

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✉ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOB, Box Philadelphia."

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CLASSIFICATION OF FRUITS.

Some years ago, while reviewing some new work on fruits in the *Gardener's Monthly*, we remarked that the best of existing works was unsatisfactory, by reason of defective classification. If we take what we regard as the best work—Downing's—and attempt to find out the name of an unknown fruit, it proves an impossibility. We have the same idea all through. The fruit is sub-acid, vinous, buttery, juicy; red rosy, or yellow; large, small, or medium; and the examiner lays down the book with an idea that his fruit may be one of a dozen, which seems to all agree very nearly with it. We suggested what we thought a very simple plan, requiring for its successful accomplishment not so much of talent or genius as of hard-working industry,—and we have since urged our views on some of our principal pomologists, by private letter; but all seem to think the plan requires greater elaboration than they could effect.

The great failure with our usual fruit classifications is that they all seek to define a fruit by positive and certain characters,—while these characters are so nicely distinguished that no two persons will agree exactly regarding them.

In the article referred to we stated that we should abandon all attempts at positive definition, and instead define by comparisons.

Nature herself—much abused nature—teaches us this mode of classifying. If we are trying to describe to some friend a third person, we do not succeed near so well by saying he has blue eyes, or dark hair, or a long nose,—as we do if we say at once he resembles John Brown, or Bob Smith. If your friend knows Smith or Brown he will understand more of the appearance of the one of which you speak, in the one expression, than if you give him the best description possible. If to this comparative description you add the positive,—if you say 'he is the very image of Smith, but he has light hair and eyes,' you see the man distinct.

To apply this to fruits. The commoner forms are well known to mere tyros in pomology. If a friend tell us he has a Pear, very large, pyriform, and of a smooth lemon yellow, with a fine white juicy flesh, and ripening in December, we shall not understand near so well what he means, as if he were to say, 'my Pear very closely resembles the Bartlett, but ripens in December.'

Why not then take well-known types, and describe them as minutely as may be—not confining oneself to mere juiciness, form and color; but take into consideration also difference in growth, size of flower, shape of leaves, color of wood, and, in fact, all the differences that really exist. A nurseryman will distinguish a Seckel from a Rostiezer pear better by the growth of the tree, than he would by the fruit; and why not avail oneself of any character that will guide us to a correct nomenclature?

The types should be of well-known varieties. These should be minutely described; and the fruit that most nearly resembles them be described immediately after, and the one or two points in which it differed from the type would be strikingly manifest, so that even a child could understand the difference. SUCH an apple would be like a Baldwin, only flatter,—a pear, like the Vicar, only yellower—a grape, like the Delaware, only sweeter and darker—or a strawberry, like the Hovey, but with larger seeds and softer flesh.

At the last meeting of the Eastern Pennsylvania Fruit-growers' Society, held at Norristown, something of this plan, as we understood it, was laid before the society for approval, by the Committee on Nomenclature, and adopted; and is, we believe, to be undertaken at once by the society. This society does not by any means claim connection with any ancient order of fossils; but seeks closely to identify itself with the modern progressive age,—and we have strong hopes that much good will ensue from its action. All we fear is, that a work of this kind will never be so well done or so early done, as when in the hands of a private individual. Large bodies move slowly; and a single individual will usually accomplish more in one day than a committee will in a month. His personal ambition is involved, and his interest—be that in the shape of fame or pecuniary profit—is a more personal inducement to persevere, than the honor and glory of any society to which he may belong. We have seen the unfortunate operation of society schemes too often. We worked hard, privately, for years to induce the establishment of a Botanic Garden in Philadelphia, and had succeeded, as we thought, in getting the thing fairly on foot, when some over

zealous friends supposed the gaining of the wealthy Pennsylvania Horticultural Society over to the cause would be a fine thing. It was done, referred, and so on, and the infant died before it had its eye teeth cut.

The scheme of fruit classification in the present instance is in excellent hand.—and in spite of the slight misgivings of the permanency of the enthusiasm the members have thrown into it, we trust it will meet with the best aid and support from all.

HEATING HORTICULTURAL BUILDINGS.

Wherever we go among gardeners, we find the question that stirs up most discussion just now is the heating of garden structures. The rival systems are hot water and hot air.

As usual there are advantages on both sides, and which is best to adopt will depend on circumstances.

There are many cases where hot water is indispensable, and flues would not do at all,—and on the other hand, flues will often do all that can be desired. It may help our readers to decide for themselves if we point out the advantages and disadvantages of each.

In all well-kept gardens neatness and elegance are of first importance. In these advantages hot-water pipes by a long way excel. We hold it to be a good point gained to have the heat conductor as near as possible to the glass, and the coldest part of the house. Here again hot-water pipes are more manageable. We can often bring three or four-inch pipes under steps or doors, or through narrow places, where flues could not be led. Again, hot water will convey heat farther, and generally with more regularity, than the best constructed flue,—and many houses can be heated from one fire, thus saving much labor, dirt and trouble.

On the other hand, hot water is expensive. In its first cost, it is about eight times greater than a smoke flue; and it is found in practice to take more coal to heat a house to a given temperature, than hot air would do. The larger the pipe employed, the greater the amount of coal necessary to keep up the temperature; but the safer from sudden changes. With small pipe houses get frequently frozen. The smaller the boiler and pipes also, the greater is it found in practice to be liable to accidents. When we speak of the relative cost of hot water and hot air, therefore, we consider the pipes and boilers found in practice to be the safest and best, namely, pipes from 3 to 4 inches, and boilers holding from 10 to 15 gallons.

Flues are cheap, and they take comparatively

less fire to get the same heat to the house than hot water. Here is their strongest argument. We have of course to take these with the same proviso as we take hot water, namely, that they be judiciously built. If built low on the ground, the earth will absorb much of their heat,—and so, also, if built of very thick material.

For houses of less than 50 by 20, and where circumstances present no mechanical objection, we judge the argument is entirely in favor of well constructed flues; but for several houses, or large houses, or very neat and tasteful houses, hot water will undoubtedly bear away the palm of victory.

Scraps and Queries.

✂ Communications for this department must reach the Editor on or before the 10th of the month.

✂ The Editor cannot answer letters for this department privately.

PLANTING STRAWBERRY-BEDS—*J. P., Cincinnati, O.*—"In a part of my garden I wish to plant a Strawberry-bed. My ground for fruit and vegetables is quite limited, and I wish to make the most of it. I am told I will gain nothing by planting Strawberries now—that they will do just as well planted in August, and that I can have the ground for other crops. What do you advise? You may think this a simple question for your experienced readers, but this is my first year with you, and I have but recently had any time to spare from commercial pursuits to give to gardening."

[Plant now. Your plants will bear double next year what they would if not set out till fall, unless you were very well skilled in plant culture. Besides, you may sow radishes, light salads, onion sets for seed (not too early however, or they will grow too large), or any short lived vegetable of low growth between the plants—and if your Strawberries are in beds, you can have bush beans, or other dwarf crops between the beds in the alley way.]

PENNSYLVANIA TEA PLANT.—A Philadelphia correspondent, *C. B. S.*, takes us to task for our remarks on this subject, in our last number. He does not "wish his note published," but would have us "profit by his advice." He thinks we have not followed our "usual patriotic course in denouncing the new discovery," which would save millions of dollars to the country, that are now sent to a "nation of cut throat barbarians," that will

take nothing from us "in return for the favor."

Our friend starts wrong. We have not denounced the 'tea;' but the wretched swindling that would persuade the people it is the *real Chinese Tea*. It may be good as the genuine for aught we know; but the fact that it is necessary to counterfeit the name, is against the probability that it is of as good quality as the original.

No journal feels a deeper interest in our national prosperity than ours; and it is precisely this which makes us feel more keenly the disgrace of our position before the "rest of the world," at having a body of men—capitalists, and with pretensions to an intelligent character—attempting to make the world believe that the *Ceanothus* is the real Chinese Tea. If it is good for any thing, let it go as *American Tea*. Our people are fond of novelties, and if equal to Chinese Tea, it will have a good enough run on its own merits.

It is out of our province to argue the 'barbarian' part of our friend's 'advice;' yet we may add, that we know the great Chinese traveller, Fortune, personally somewhat, and have heard of him from good authority much more,—and believe him to be one of the most unprejudiced of men,—and his opinion is that the Chinese as a nation, and on the whole, stand among the foremost in morality, if not at the very head. The 'cut-throatedness' is confined to the seaports that are in contact with Europeans. However, this is nothing to the point. If we can produce a home-grown article, that will equal the imported, let it be from what plant it may, and at the same time keep a large portion of our wealth at home, no one will rejoice more than we shall.

NEW BASKET PLANTS—*C. Chicago, Ills.*, asks: "Whether there be any new basket plants that have not been noticed particularly in the *Gardener's Monthly*, that are well adapted to the purpose?"

[We are not sure that we have not noticed some of the following before, but we have seen them very beautiful during the past year. For dry sunny positions, all the Sedums are excellent, particularly *Sedum acre*, *S. villosum*, *S. Sieboldii*, and *S. carneum variegatum*. *Vinca major variegata*, for shade; *Centradenia rosea* and *C. floribunda*, for warm and sunny rooms, also *Lopezia rosea* for winter, and *Lobelia marmorata*. For entire shade, the fern *Nephrolepis bulbosa*, and Ivy algerine (with very large), and Russian (with very small), leaves.

The best plant, however, for any and all circumstances, comprising merit and ease of culture, is

the *Vinca*. It is what the Concord is among grapes.

DRAG HOES—*C. F., Cincinnati, O.*, asks:—"Is there any modern improvement on the common hoe in the Eastern States? I am informed that it is frequently done by a kind of fork, that lessens half the labor, and quite as effectual. I should suppose it would not cut the weeds up, but would be glad of what you know about it in an early number of the *Monthly*."

[Our correspondent refers probably to the 'Drag Hoe,' of which the following representation was given in an early volume of the *Monthly*:



It has become very popular since. Many are made with five teeth or prongs as an improvement, but the old four-pronged one is still the best. It will not cut the weeds if they are very strong. In fact, it is only to those who follow the 'stitch in time' practice, that the hoe is useful.

A correspondent in another column inquires if any improvements have been made since our first cut as above was given. They are made with teeth flat in the front, and triangular for the back, and with sharper ends, which we think better.

NAMES OF PLANTS—*B., Cleveland, O.*—1 *Indigofera australis*. 2 *Acacia lineata*. 3 *Eranthis hyemalis*, this is hardy. 4 *Eupatorium elegans*. 5 Some *Correa*, cannot name it from a leaf and an unexpanded bud. 6 *Pittosporum tobira*. 7 *Chorozema cordata*. 8 *Lachenalia tricolor*. 9 Cannot undertake to name single flowers of *Azaleas*—perhaps *Pride of Dorking*.

COLD AT ROCHESTER, WISCONSIN.—A correspondent from this place, which is in Racine county, says:

"On January 1st, the thermometer was 31° below zero, and not above 29° below zero all day. On the 2nd it was 32° below zero, and from 10 to 20° below zero the week through."

COLD GRAPERY—*J. B. H. C., Cumberland, Md.*—I am about to build a Cold Grapery, 20x24 feet, 12 feet high in the centre, and am at a loss to know whether it would be best to have it 3 or 4½ feet high at sides. I propose to support the house on locust posts, and have it planted about 3 feet,

and then thought of having 18 inches of glass above that; but perhaps that will not give the roof pitch enough. Will you be kind enough to give me your views on this matter, or refer me to some published article that will give me the information."

[Except for ornament, there is no use in glass sides for a cold vinery. Three feet would be quite high enough for the sides.]

Practical men differ in their views about the proper pitch of a vinery. Our views incline to flattish roofs. Certainly your house would not be 'flat,' even to a 'steep pitch' advocate, and we have no doubt will prove satisfactory.]

RASPBERRIES—*S. I. Miller, Grantsville, Md.*, asks:—"Please let me know through your journal which is the best mode of raising Raspberry plants for sale. Which do you consider the three best hardy varieties, beside the Orange, for family use? I think of planting the American Purple-cane, Franconia, and Philadelphia."

[Cutting up the roots, and sowing on a hotbed in April, and planting out the sets like Cabbage plants in June.]

The varieties named would probably be as good as any on the whole.

WHAT GRAPE FOR WINE?—*W. L. A., Greensburg, Pa.*—This is a question now asked by many who are now preparing ground and contemplate planting the coming spring.

The Grape interest is becoming of much importance in the vicinity of Pittsburgh, and an answer to the above query by men of experience would be a public benefit. Is it the Concord, Delaware, Venango, Rogers No. 15, or any other new grape?

Private advices from Cincinnati place the Venango high among the new varieties, as valuable for wine purposes. Is it so in other places?

Can a response be had in the April number of the *Monthly*?

[Almost all the Wine-growers we know are placing the Clinton pretty high on the list of wine grapes. It is a subject in which we have no personal experience, and would prefer to have the views of our more practical correspondents.]

THE WINTER IN MARYLAND—*S. I. M., Grantsville, Md.*, writes:

"It would interest me to know how low the mercury has sunk in your city this winter. The lowest reached here was 13°, while two miles distant, on Casselman's river, a small stream, it was said to have been 20° below zero. The fruit-buds

of the peach and the heart cherries are killed here."

[In Germantown, 8 miles from Philadelphia, the Thermometer was about Zero. Is it possible Peach and Cherry buds were killed by 13° above Zero? Our correspondent no doubt means 13° bel. Zero.]

INQUIRY ABOUT HONEY LOCUST—*T. C. Marion, O.*—"Will some of your subscribers please inform me, through the *Monthly*, how to raise a hedge from Honey Locust seed?"

1st. How should the seeds be prepared for planting? 2d. Time and manner of planting the seed. 3d. Will it do to plant the seed where you want the hedge to stand? If so, what distance apart should the plants be permitted to stand? 4th. After-treatment in order to form a good hedge. 5th. Will the Honey Locust form a good durable hedge on a rather stiff clay loam? The Osage Orange does not answer the purpose here. The thorn is imperfect, and besides the plant often winter-kills down to the ground."

Books, Catalogues, &c.

DREAMTHORP: A Book of Essays, written in the Country. By Alexander Smith. Boston: Published by J. E. Tilton & Co.

To those who are in love with country life, this little volume will be particularly welcome. It embraces twelve essays entitled, one, Dreamthorp, two, on the writing of essays; three, of Death and the fear of Dying; four, William Dunbar; five, a Lark's Flight; sixth, Christmas; seventh, Men of Letters; eighth, on the Importance of man to himself; ninth, a Shelf in my Book-case; tenth, Geoffrey Chaucer; eleventh, Books and Gardens; twelfth, on Vagabonds.

The "Poems" of Mr. Smith have become part of the standard literature of the day, and whoever has read them and admired their beauty, will be prepared to find in the present a very delightful book. The author is a poet by nature. He writes as if he felt he had a mission to perform, and that mission to be the interpretation of nature. He can explain more to us in one hour, than most of us would learn alone in our lives—and all without effort, and as it were unconsciously to himself. The great merit of Smith's writings indeed lies in their simplicity. Though he seldom loses sight of himself, the *ego* is not thrust forth obtrusively. He does not let you forget that it is he who is talking to you; but he would have you know nature is his

mistress, and that he is but her mouth piece. He tells us of himself, that he would rather "be remembered by a song than by a victory." "To be occasionally quoted is the only fame I care for."

There is no reason why he should not have the poor reward he wishes for. There is scarcely a sentence that does not contain a brilliant and original thought—not perhaps that the idea is in itself new, but that it is presented to us in so new a style, as to appear as "good as new." We know, to be sure, as the old saying long ago expressed it, "that a sad heart needs no chastening"—but it comes home much nearer when clothed in Smith's expression, that "the man who has a grave or two in his heart, does not need to haunt church-yards."

In one respect Smith is, perhaps, superior to any living writer. He knows how to vary style to suit his subject. We often hear a tune that does not strike the ear as particularly sweet—or read verses that have nothing peculiarly pleasing: but in the hands of a master of music, the words and the air have been specially adapted, and when sung together make the most delightful music one could wish to hear. In this species of prose-melody Smith excels.

To our readers, in whom the intellectual element, is one of the most considerable of the pleasurable resources of country life, we cordially recommend this edition to their rural libraries—and close our notes with an extract from the essay on 'Books and Gardens.'

In my garden I spend my days; in my library I spend my nights. My interests are divided between my geraniums and my books. With the flower I am in the present; with the book I am in the past. I go into my library, and all history unrolls before me. I breathe the morning air of the world while the scent of Eden's roses yet lingered in it, while it vibrated only to the world's first brood of nightingales, and to the laugh of Eve. I see the pyramids building; I hear the shoutings of the armies of Alexander; I feel the ground shake beneath the march of Cambyzes. I sit as in a theatre—the stage is time, the play is the play of the world. What a spectacle it is! What kingly pomp, what processions file past, what cities burn to heaven, what crowds of captives are dragged at the chariot-wheels of conquerors! I hear or cry "Bravo" when the great actors come on shaking the stage.

The house I dwell in stands apart from the little town, and relates itself to the houses as I do to the inhabitants. It sees every thing, but is itself unseen, or, at all events, unregarded. My study-window looks down upon Dreamthorp, like a medita-

tive eye. Without meaning it, I feel I am a spy on the ongoings of the quiet place. Around my house there is an old-fashioned rambling garden, with close shaven grassy plots, and fantastically-clipped yews, which have gathered their darkness from a hundred summers and winters; and sundials, in which the sun is constantly telling his age; and statues, green with neglect and the stains of the weather. The garden I love more than any place on earth; it is a better study than the room inside the house which is dignified by that name. I like to pace its gravelled walks, to sit in the moss-house, which is warm and cosy as a bird's nest, and wherein twilight dwells at noonday; to enjoy the feast of color spread for me in curiously-shaped floral spaces. My garden, with its silence and the pulses of fragrance that come and go on the airy undulations, affect me like sweet music. Care stops at the gates, and gazes at me wistfully through the bars. Among my flowers and trees nature takes me into her own hands, and I breathe freely as the first man. It is curious, pathetic almost, I sometimes think, how deeply seated in the human heart is the liking for gardens and gardening. The sickly seamstress in the narrow city lane tends her box of sicklier mignonette. The retired merchant is as fond of tulips as ever was Dutchman during the famous mania. The author finds a garden the best place to think out his thought. In the disabled statesman every restless throb of regret or ambition is stilled when he looks upon his blossomed apple-trees. Is the fancy too far brought, that this love for gardens is a reminiscence haunting the race of that remote time in the world's dawn when but two persons existed—a gardener named Adam, and a gardener's wife called Eve?

I like my garden better than any other garden for the same reason. It is my own. And ownership in such a matter implies a great deal. When I first settled here, the ground around the house was sour moorland. I made the walk, planted the trees, built the moss-house, erected the sun-dial, brought home the rhododendrons and fed them with the mould which they love so well. I am the creator of every blossom, of every odor that comes and goes in the wind. The rustle of my trees is to my ear what his child's voice is to my friends the village doctor or the village clergyman. I know the genealogy of every tree and plant in my garden.

I watch their growth as a father watches the growth of his children. It is curious enough, as showing from what sources objects derive their importance, that if you have once planted a tree for other than mere commercial purposes—and in that

case it is usually done by your orders and by the hands of hirelings—you have always in it a quite peculiar interest. You care more for it than you care for all the forests of Norway or America. You have planted it, and that is sufficient to make it peculiar among the trees of the world.

THE CHRONICLES OF A GARDEN: its Pets and its Pleasures. New York: Robert Carter & Bros. From A. S. Martien, Philadelphia.

This volume is got up in superb style, and would recommend itself even as a beautiful ornament for a parlor table. On a casual opening we are pleased to find that the kernel is as sweet as the shell is beautiful—and we propose to enjoy it leisurely and discuss its merits more fully next month.

CATALOGUES.

Charles Davis, Jr., Phillipsburg, New Jersey. Fruits, &c.

B. K. Bliss, Springfield, Mass. Flower and Kitchen Garden Seeds.

R. Buist, Jr., Philadelphia. Almanac and Garden Calendar.

James H. Gregory, Marblehead, Mass. Seeds.

Francis Brill, Newark, N. J. Summer Flower Bulbs.

Alfred Bridgeman, New York. Vegetable Seeds.

“ “ “ Flower Seeds.

“ “ “ French Gladiolus.

J. M. Thorburn & Co., New York. Vegetable and other Seeds.

H. E. Hooker & Co., Rochester, New York. Wholesale List.

Robert Buist, 76th & Darby Road, Philadelphia. One of Roses and another of Greenhouse Plants.

J. Knoe, Pittsburg, Pa. Small Fruits.

H. A. Dreer, Philadelphia. Garden Calendar.

H. B. Lum, Sandusky, O. Flower Seeds.

James Vick, Rochester, N. Y. Guide to the Flower Garden. Seed List.

Stephen Hoyt & Son, Caanan, Conn. Wholesale List.

J. M. Thorburn & Co., New York. Flower Seeds.

MAGAZINES, PAMPHLETS, &C.

Harper's Magazine.—We have received from the publishers a set of this valuable serial, for which we are much obliged.

Their publications stand at the head of the peri-

odical press? ‘Harper's Weekly’ alone having a circulation of over 100,000.

Transactions of the Massachusetts Horticultural Society, for 1863—for which the Secretary will please accept our best thanks.

Transactions of the Indiana Pomological Society. From Geo. M. Beeler, Esq., and from the President Nelson. We noticed last month, the last session of the society, from a newspaper report. The full proceedings show the society to be one of the most useful of these popular associations.

New or Rare Plants.

POLYCHILUS CORNU-CERVI, STAGSHORN POLYCHILUS.—Among a host of other new orchids from Moulmein, Messrs. Hugh Low & Co. have been fortunate enough to introduce a few individuals of this remarkable plant, which appears to be of free growth, and will no doubt speedily produce flowers. In habit it resembles a *Phalenopsis*, to which indeed Prof. Reichenbach refers it; but the lip is differently formed, and the flowers are attached to a broad branching toothed rachis, unlike anything that has yet been seen in the genus in question. The flowers of *P. cornu-cervi* are described as of a reddish-yellow, about two inches across, and speckled in lines with a deeper red.

DENDROBIUM INFUNDIBULUM.—A single flower of the glorious Moulmein *Dendrobium* has just been produced on a small plant in Mr. Rucker's collection. It is inimitably beautiful, the sepals and petals being of a dazzling white, with a lip to correspond, marked at the base with clear lines of deep Roman red. This, too, is one of Messrs. Low's introduction, and appears to be of the easiest cultivation.

The *Botanical Magazine* figures the following:

PELARGONIUM BOWKERI (Mr. Bowker's *Pelargonium*)—*Nat. ord.*, Geraniaceae. *Lin.*, *Monadelphica* Decandria. Native of the Trans-Kei country in South Africa. Graceful in foliage and flowers, but the latter are devoid of striking color; they are tinted partially flesh-color and partly yellowish green. t. 5421.

SCHIZOSTYLIS COCCINEA (Crimson *Schizostylis*.) *Nat. ord.*, Iridaceae. *Lin.*, *Triandria* Monogynia. Native of watery places in British Caffraria. Flowers crimson, blooming late in autumn. t. 5422.

MIMULUS REPENS (Creeping Monkey-Flower).—*Nat. ord.*, Scrophulariaceæ. *Lim.*, Didymia Gymnospermia. Native of extra tropical Australia, and as far as Victoria, and then in Tasmania. It is also common "in saline situations, and muddy bands of rivers in New Zealand." It will probably require the protection of a cold frame in winter. Its flowers are lilac, partially dotted with yellow. t. 5423.

SOLANUM ANTHROPOPHAGORUM (Cannibals' Solanum).—This is one of the condiments eaten with human flesh by the Cannibals of the Feejee Islands. Such flesh they all acknowledge is most indigestible; and the fruit of this plant, called by them *Boro dina*, somewhat resembles the Tomato, but having an aromatic smell, is employed to assist digestion, and its leaves are wrapped round the flesh previously to its being baked. t. 5424.

The *Floral Magazine* figures the following:

RHODODENDRON, *Princess of Wales*. Prevailing color, dark mauve, shading off to a white throat. Its truss is large, and altogether the variety is superior. Raised by Mr. Young, Milford Nurseries, near Godalming. pl. 177.

ROSE, *Baron de Rothschild*. Brilliant crimson, very large, and very double. pl. 178.

GLOXINAS.—*Lady Emily Villiers*, pink ground, darker towards the throat, which is white; centre of lower segment have a band of white spots. *Lady Victoria Howard*, mauve, towards the throat brownish crimson, throat white; centre of low segments have an irregular band of white lines. *Mademoiselle Suzanne de la Bouillerie*, segments of corolla dark lilac, throat white. They were raised by Mr. Breeze, and are now in the possession of Messrs. E. G. Henderson & Son. pl. 179.

ACHIMENES.—*Purpurea elegans*, claret color, throat orange. *Leopard*, pale crimson, throat orange, spotted with crimson. Raised by Mr. Parsons, of Welwyn, and now possessed by Mr. B. S. Williams, Paradise Nursery, Holloway. pl. 180.

The *Florist and Pomologist*, iii., 1, gives the following:

CAMELLIA, *Sarah Frost*. Said to be of American origin, but now in the possession of Mr. Standish, of Ascot Nurseries. Remarkable for the perfect regularity of the arrangements of the petals, and the accurate circularity of its entire form. Color pale carmine, substance good, and retaining both form and color for a long time.

Domestic Intelligence.

A STRAWBERRY MOUND.—Select a spot of ground in your door-yard, or elsewhere, where you do not design plowing, and make a small mound of turf, litter, a few stones, etc., with soil enough to fill up all the crevices, and let the whole be pressed firmly together, so that it shall settle as little as possible. Then collect a quantity of pebble-stones of various sizes, and after covering the mound to the depth of four or five inches with gravelly soil, commence at the bottom and enclose it with a circle of the largest pebbles you have, pressing them firmly into the soil; then at the distance of five or six inches up the side of the mound, place another circle of smaller pebbles, and so continue until the surface of the mound is all divided in this manner into sections.

Now procure some fine strawberry plants, and place a row of them in each division, and next year, if your vines do well, you will have not only a nice green mound, which will be an ornament to your yard, but also a very fruitful one. These mounds may be made of any desirable size. Three feet in diameter, and the same in perpendicular height, is about the size which will usually be found convenient.—*Ohio Farmer*.

SHALL WE PLOW OUR ORCHARDS?—I am of the opinion that a plow is not a suitable implement to use in an orchard.

A few years since, after having plowed my orchard about every way, and harrowed it the same, I seeded it to grass—but found the surface of the ground too uneven to seed down, without much labor with hoe and shovel to level the tree-banks, but, at last, got it quite well done, and I think it will stay done.

Now what will keep the trees in good growing condition? I have practised muleing around the trees annually, which appears to be just what is needed. In the winter or spring,—probably mid-winter is better if snow will permit—take straw from the straw pile, after the cattle have trodden it under foot and mixed the manure with it, and put it around the trees, at the rate of a good load to eight or ten trees, thick enough to keep down grass and weeds. Consider whether the trees need much or little manure with the straw, and govern accordingly. If the orchard has been seeded down so long that the turf has become close and tough, I would take a pick or other implement, and dig up

the turf for several feet around the tree, replace the turf bottom-side up, and mulch as before. This seems to be what is wanted to keep the soil loose and enrich it as much as necessary. In fact, it seems to be what new rum was said to be in my boyhood—good in wet weather, and good in dry weather; good in hot weather, and good in cold weather; and, finally, good all the time. I shall practise this method a while longer, and if I discover my orchard to be running down, and cannot find a better preventive, I shall again resort to the plow.—*Cor. of Wis. Farmer.*

THE BLACKBERRY.—1. The Dorchester is the most profitable blackberry to cultivate for the market.

2. The average price to be obtained for good fair berries through the season, may be safely estimated at from 20 to 25 cents per box.

3. The expense of time and labor in cultivating and picking them, and the expense of fertilizing is comparatively small.

4. Everything considered, they are the most profitable small fruit cultivated.

And how can the latter proposition fail to be correct, if the former are?

Mr. Hyde estimates the average value of strawberries, per box, at 20 cents, through the season. This is two cents per box higher than I have usually been informed by cultivators from Boston market. I sell my strawberries in the country, and thus save the expense of hulling. Some city markets do not require strawberries hulled.—*Correspondent of N. Eng. Farmer.*

APPLES FOR THE NORTHWEST.—Experienced cultivators and observing men recommend the following varieties as valuable apples for cultivation in the Northwest, and as being extra hardy. They furnish a supply the year round:

Red Astrachan, Duchess Oldenburg, Fall Stripe, Aut. Strawberry, Sweet Pear, Fameuse, Fall Wine Sap, Colvert, Cider, Sweet Wine, Tollman Sweet, Pomme Gris, Northern Spy Apple, Winter Wine Sap, Perry Russet, Golden Russet, Raules Janet, Canada Black, Red Romanite, Dumelows,

There are nearly as many more that promise well, but have not had thorough trial, which will give entire surety in their ability to stand our hard winters.

Eastern varieties that are hardy grow very fair fruit and of good size. Canada and Eastern people are often at loss to recognize well-known varieties. L. L. FAIRCHILD, in *N. Eng. Far.*

ORIGIN OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.—The First meeting of this society was on the 24th of February, 1829, when sixteen gentlemen convened at the insurance office of Zebedee Cook, Jr., 7½ Congress Street, Boston, for the purpose of instituting a Horticultural Society, when the Hon. John Lowell, of Roxbury, was chosen Moderator, and Zebedee Cook, Jr., appointed Secretary.

It was then voted—that Messrs. H. A. S. Dearborn, Zebedee Cook, Jr., and Samuel Downer, be a Committee to prepare a Constitution and By-Laws for the government of the Society.

Among the sixteen were two from Salem, Mr. Robert Manning and myself. I am desirous to ascertain how many are now living. Those present at that meeting, as far as I can remember, that are deceased, are Messrs. Manning, Dearborn, Cook, Downer, Bartlett, Brewer, French and Phinney. If you can furnish the names of the sixteen for your Journal, you will oblige, yours truly, JOHN M. IVES, in *N. Eng. Far.*

GRAPE CULTURE.—Mr. Knox thinks grape culture has been injured by its friends, who advise great expense in preparing the ground; some of them advise to stir the soil three and others four feet deep. This is a useless expense, and positively injurious to the vine. Fifteen to twenty inches is as deep as the soil need be stirred. If worked much deeper, and manured heavily, the vines grow too rampant. Beginning with the newly planted vine, he cut back to two or three eyes. The second year he cuts out all but one cane, and the next fall cuts that back to three eyes. These produce three strong fruiting canes for the third year, two of which are bent, to form the arms, and the middle one trained upright. The trellis is not erected until the third year. The vines will each mature 10 lbs. of grapes the third season, and throw up canes for future fruiting. The process then consists in cutting out each alternate upright shoot every year, which leaves four bearing and four growing canes to each vine—the vines being six feet apart, and the upright about nine inches distant and eight feet long. During the summer the new growth of the spurs is pinched in, retaining as many leaves beyond the last cluster, as there are clusters on the spur. Arms, he thinks, does not afford sufficient room for our rampant growers, that if left to themselves, would cover a tree 100 feet in height. Prunes in November.—*American Agriculturist.*

APPLE JELLY MADE CHEAPLY FROM NEW CIDER.—*Statement of Gorey & Son.*—We send you by express several specimens of cider jelly, which you will please have the goodness to test and dispose of *ad libitum*. It is made purely of the juice of the apple, without any admixture whatever, no sugar, no chemicals. The apples were ground and pressed in the ordinary way, and the cider, after being strained, and before its fermentation, was passed in a thin and nearly continuous current over the intensely heated surface of our clarifying and evaporating sugar pan. The whole process of cleansing and condensing to the requisite consistency for jellies, being about eight gallons into one, is performed in from twenty to thirty minutes from the time that the cider enters the clarifier until it leaves the opposite end of the evaporator, duly cleansed, condensed and cooked. From fifteen to twenty barrels of cider may be thus transformed per day of ten hours' service, on a pan of suitable dimensions for family or neighborhood use.

Our apparatus is made of copper, and proves equally adapted to the manufacture of these pleasant tarts and our northern sweets. It is observable that cider jellies do not (at least in our three years' experiments) congeal into candy nor mould on the surface. Its flavor also improves by age. The jellies herewith presented, of the past season's manufacture, were made of a mixture of tart and sweet apples, and the fair samples of several thousand gallons made in this region by ourselves, and by others who have adopted our implements and method of manufacture. An abundance of the like may, in propitious seasons, be made to advantage in all the fruit-growing portions of our country. It has been much admired wherever introduced, and our physicians prefer it for their patients to other jellies made of the best materials.—*Ohio Farmer*.

HONEY LOCUST HEDGES IN CANADA.—The *Canada Farmer* says:

The Honey Locust has also been tried, and any one who is desirous of seeing a hedge of this plant will be cheerfully welcomed at Mr. Beadle's residence near St. Catharines, where he can show him a field of twenty acres enclosed with it.

POISONOUS PROPERTIES OF SHADE GROWN PLANTS.—The Academy of Sciences held an interesting meeting on Monday, Mr. Collingwood said:

"M. Burgeois, a member of the Society of Agriculture, communicated to the Academy of Sciences

at their last meeting, some observations on the grass of a meadow which had partly grown under the influence of the sun, and partly in a shady spot. The grass having been converted into hay, the portion which had sprung up in the shade was refused by three horses, which on the other hand, greedily ate up that which had the benefit of the sun. Chemically examined, the two kinds of hay presented certain differences of composition. A current of steam having been made to pass through each of the two kinds and then collected in glass receivers it was found that the unsunned hay had yielded a much less odoriferous product than the other: and that the steam collected from the sunned hay deposited only a few white flakes after many days; while the steam collected from the unsunned hay deposited a great many in a much shorter time. Moreover, the latter, kept in a close vessel, was soon covered with mould, while the other was not."

During the discussion which followed, Prof. Ford stated, that Celery, when grown in the cellar for winter use, developed a deadly poison: and potatoes, which grew away from the sun-light formed a deadly poison, called *solanum*, full as fatal as nux-vomica. Celery grown out door, and then put in the cellar and covered up, does not partake of this character.—*Elmira paper*.

THE BERBERRY AS A HEDGE PLANT.—The *Canada Farmer* says:

There are many, however, who think the Berberry will prove to be just what is wanted, and we now call attention to it, in the hope that those who have made any experiments with it, will give us all the benefit of their experience, and that the plant may be thoroughly tested for this purpose. It certainly seems to possess many very desirable qualities in a Hedge Plant.

LORD BYRON'S TREES.—"Quitting the Abbey, and passing into the gardens, we followed the gardener through the deepening gloom to the wood, where, in former days, an ancestor of the Byrons had set up leaden statues of Satyrs, which the country people call "The old Lord's devils," and very much like Devils they look. The tree was pointed out, on which Lord Byron cut the name of 'Angusta' and 'Byron,' with the date during a last walk the brother and sister took together, at Newstead. It was a double tree, springing from one root, which he chose as emblematical of themselves. The dim light barely enabled us to discern the let-

ters deeply carved, but growing less visible with expanding bark. One of the trees has blasted, seeming under that spell which has withered all connected with the name, and is cut off just above the inscription. The oak planted by Byron in his youth, on another part of the ground, was also shown us. It is yet strong and vigorous. "*Annesley Hall and Newstead Abbey.*"—*At. Monthly.*

TREATMENT OF AN APPLE ORCHARD.—As to an apple orchard, I have no hesitation in saying, that if you can sell the fruit well, and your sorts are good, it will pay you to leave the whole crop of grass to rot on the ground, and you will never want for a full crop of apples. You must, however, plaster heavily each spring.

Adjoining the orchard, above mentioned, we have a garden with some apple trees in it. We manure this, and dig round the trees, and raise vegetables. These apple trees bear one crop in three years only, and the growth and health of the trees is not to be compared with those in the orchard, where the ground is never touched, or manured, except by the after grass and plaster.

People who either plow or dig in an orchard, need not expect a certain crop of apples, or a thrifty growth of trees. The roots of the apple trees naturally seek the surface for the nourishment of decaying vegetation. If you plow or dig you destroy these roots, and thus deprive the trees of the means of growth. No manure you can give will ever make up for this wholesale destruction of the roots of the trees.—*Canadian Correspondent of Genesee Farmer.*

BOSTON CURLED LETTUCE.—I sent to Marblehead for the true sort; planted no other; found the leaves very pretty, but so thin, hard and insipid, that I should as soon think of eating plantain.—*R. W. MATHEWSON, Durham, Conn., in Country Gentleman.*

LOMBARDY POPLAR FOR FENCES.—Favorites for Hedge Fences in the west, rule about as long as Mexican politicians. Scarcely has the White Willow got fairly seated on the popular throne, before a new candidate starts, in the person of the Lombardy Poplar. A correspondent of the *Ill. Farmer* is loud in its praise. We saw a huge Lombardy turned up by the roots, in Eastern Pennsylvania, recently—the last of a long line of 'hedge.' We suppose these things are a sort of horticultural measles or rash, which all must have. Pennsylvania has had hers long ago. Her younger western sisters' turn comes now.

COFFEE AND TEA CULTURE IN CALIFORNIA.—The cultivation of coffee and tea promises to become an important business in California. One nursery at Sacramento has over five thousand coffee plants on trial, and it is believed that there will be no difficulty in bringing up the plant to a standard of hardiness to weather the mild winter of that climate. Near the Mission Dolores several thousand tea plants have been raised during the last year. The tea plant is grown in China and Japan very extensively in latitudes corresponding to all California, and the San Francisco journals think there can be little doubt that it will be cultivated hereafter, for household purposes at least, on every farm in that State.

DOOLITTLE BLACK CAP RASPBERRY.—Among the small fruits the Black Cap deservedly holds a high place. Last year, Mr. S. Hood, of Springfield, this State, gathered from a half acre 1459 quarts, for which he received \$182 85; and he says the prospect the coming season is for a third larger crop. The price per quart was not large, being only 12½ cents, or \$4 50 a bushel. Reducing the quarts to bushels—thirty-six wine quarts to a bushel—and we have eighty bushels to the acre. Allowing 2½ cents a quart for picking, we have \$292 per acre for the crop.

To set an acre of plants and cultivate them two years will not cost \$40.

In five years we will wager that the Black Cap raspberry will be more abundant than the Currant in our markets.—*Illinois Farmer.*

A NEW GRAFTING WAX.—Several of our friends who have tried the following composition as a grafting wax, have been much pleased with it. We see it also recommended in some of the horticultural journals—to wit: One pound of rosin, five ounces 95 per cent. alcohol, one ounce beef tallow, one table-spoon of spirits of turpentine.

Melt the rosin over a slow fire, add the beef tallow, and stir with a perfectly dry stick or piece of wire. When somewhat cooled add the turpentine, and last, the alcohol in small quantities, stirring the mass constantly. Should the alcohol cause it to lump, warm again until it melts. Keep in a bottle. Lay it on in a very thin coat with a brush. In a room of moderate temperature, the wax should be of the consistence of molasses. Should it prove thicker, thin it down with alcohol. It is always ready for use, is never affected by heat or cold, and heals up wounds hermetically.—*Germantown Telegraph.*

THE BLACK THORN FOR FENCES.—A correspondent of the *Valley Farmer* has become thoroughly convinced, from experiments made, that the common Black Thorn, which grows wild in our woods and prairies, is peculiarly adapted for fencing.

A good GLUE is prepared by dissolving common glue in vinegar to the consistency desirable for use. It will keep for a long time.

Foreign Intelligence.

PEGGING DOWN ROSES.—This plan has been before noticed in our journal. As the season is approaching, the following in addition, from the *Gardener's Chronicle*, will be useful :

Mr. C. J. Perry strongly recommends Pegged-down Roses for the flower-garden; and states the advantages to be:—1. That a much greater quantity of good blooms are produced; 2. The blooming period is much prolonged; 3. Many kinds which are otherwise too much crowded with buds to open freely, will thus produce single blooms of great size; 4. The plants are less subject to injury from winds. The mode of procedure, which is described in last month's *Florist*, is to take vigorous plants, budded low on the Manetti, or better on their own roots; to cut away all the small shoots, and a few inches of the ends of the strong ones, and to bend these pruned shoots carefully down to the ground, and fasten them with pegs strong enough to last for the season. The result is a crop of fine blooms—such blooms, indeed, as enabled Mr. Perry to carry off two leading prizes at Birmingham last July. But besides the flowers, many shoots will be produced from the base, too strong for summer-flowering, but most of them such as produce 'noble flowers' in the autumn. These are shoots for pegging down the following season. The old ones are cut away in the course of the winter, and the plants, with their ample supply of strong shoots 4 to 8 feet high, are described as then resembling Raspberry bushes. These shoots are bundled together and tied to a stake to prevent their being injured by wind, and at the latter end of March are pegged down. Mr. Perry observes, that when this method of pegging down and dwarfing strong-growing Roses becomes generally known, many of the valuable robust show varieties will occupy the prominent position in our flower gardens, to which their merits entitle them.

NEW QUALIFICATIONS FOR A CLERGYMAN.—The following advertisement we clip from an English paper:

"A few lovers of Gospel truth are in want of a minister. One who understands gardening, hot-houses and greenhouses, and who would be willing to employ himself in the same, would receive £40 per year, in addition to what might be raised by the friends. Apply to Mr. John Bartlett, Saw Mills, Ringwood, Hants."

NOTICES TO THE PUBLIC IN ENGLISH GARDENS.—A few years ago I sent to this Journal, a description of some gardens, which I had an opportunity of visiting during my travels in China, and among those described, was one belonging to Houqua, the great tea merchant of Canton, well known in connection with the once celebrated compound, called "Houqua's Mixture."

In this garden there were many things well worthy of notice, and altogether it was a very pretty place.

Roses, cultivated in pots and covered with flowers, were there in abundance, and this too at a time when such a thing was considered impossible by practical gardeners in England. Orange trees also were there, some of them of a goodly size, and others only a foot or two feet in height, but all equally under the control of the gardener, and loaded with delicious fruit.

In England we have overcome our difficulties as regards pot Roses, and some day soon we hope to be equally successful in the culture of the Orange.

Many other kinds of plants, remarkable on account of the beauty of their foliage, flowers or fruit, were also cultivated in this garden. These, with the nicely paved walks, ornamental dwarf walls, halls, summer houses, alcoves, and small lakes or fish ponds for gold and silver fish, had a very pretty appearance, and were very enjoyable. But it is to the public notice boards observed in this garden, which I described at the time, to which I wish to draw especial attention on the present occasion, more particularly. Houqua, like a true English gentleman, was quite willing that those enjoyments and luxuries which he had created for himself, should, under certain restrictions, be enjoyed by the public, and it was, therefore, easy for any one to obtain access to his garden.

The good people of Canton were not slow to avail themselves of his liberality. During high days and holidays they used to go there in great numbers, and to their credit, let me add, they were as well behaved as those crowds are who now visit our great National Garden at Kew.

In these early days, of which I write, the working classes in this country were looked upon as wild and mischievous in their habits, and were not considered fit to be trusted in our public gardens. If admitted at all they were watched like so many thieves, and the stoves and greenhouses were carefully kept under lock and key.

The writing on the "notice" boards of those days were warnings indeed. To be given into custody, to be fined and imprisoned, or to be prosecuted with the utmost rigor of law, was to be the fate of all those who should walk on the grass, or touch the flowers or the fruit. Now what were the garden notices like at the other end of the world at this period, among a people whom we are accustomed to consider barbarians and uncivilized? Houqua had up notice boards also in his garden for the guidance of the public. But he was evidently of opinion that human nature is not quite so bad as some would have us believe, that there is a chord in the lowest mind which will vibrate if it is properly struck, and that, in short, as we ourselves say, "there is honor among thieves." His garden notices were therefore very different from ours. Here is one or two of them as examples:

"In this garden the plants are intended to delight the eyes of all visitors; a great deal has been expended in planting and in keeping in order, and the garden is now beginning to yield some return. Those who come here to saunter about are earnestly prayed not to pluck the flowers, in order that the beauty of the place may be preserved. We beg persons who understand this notice to excuse it."

On a Lecchee tree which was growing on the side of one of the walks, and whose branches were loaded with bunches of scarlet or crimson fruit, there was the following polite notice:

"Ramblers here will be excused plucking the fruit of this tree." Another notice "earnestly requests those who chew Betel Nut to spit outside the railings." The notices were all of the same character as those I have quoted; no threatening language was used, but the better part of human nature was appealed to, and certainly the appeal was not made in vain. The visitors were made to feel that they were trusted, that the garden was kept up for their enjoyment, and that they were in honor bound to respect it themselves, and to guard it from being injured in any way by the ill-disposed. This is the way they do things in China, and it is probable the practice had been in existence for a long time previous to the date of my visit to that country.

I will not venture to say that the Chinese custom I have described has had any effect upon those who frame the notices which we now see in our English gardens, but a change for the better has certainly taken place since the time to which I have alluded. What are the notices to the public like, which we observe in our gardens now?" Take the notice boards at Kew as an example. As we enter this noble National Garden, we read something like the following—"Visitors are requested not to touch any of the plants." "As these gardens are for instruction and recreation, smoking, idle sports and play are forbidden." At Battersea Park we read that "visitors are requested not to walk on the Grass on this side of the Park." And in the training schools at South Kensington there is a notice, stating that "the protection of the school property is confided to the students: this is 'By order of the Lords of the Committee of Council of Education.'" I might give many other examples of a like kind which I have met with in various parts of the country, but the above are sufficient to mark the change which has taken place. The examples given are perhaps not quite up to the Chinese mark for politeness; but they are probably as near as could be expected from us 'outer barbarians!' These little matters, although at first sight apparently insignificant in themselves, tend to show that we have learned to form a higher opinion of the working classes than we formerly had; we have discovered that they are not quite so bad as we had supposed them to be, and that it is possible to trust them to walk in gardens, amongst trees and green grass and flowers, under certain restrictions of a very gentle kind. And in addition to this, we have also learned a little more of human nature. It is a curious thing that most persons in the world are particularly anxious to do any thing which they are desired to leave alone. Tell a child he may eat of all the fruits of the garden except one—the sourest perhaps of them all—and he will not rest until he has tasted the forbidden fruit. And so it is with children of larger growth, from the time of the first gardener's wife until the present day. But there is also a better part of human nature to be worked upon—the part to which I have already alluded as being so well understood and worked upon by the Chinese.

In dealing with the working classes, in so far as their admission to our Gardens is concerned, two things ought to be kept in view. The better feelings of their nature ought to be called into action, and they ought not to be menaced and tempted by too stringent prohibitions. We are going upon

this tack now, and apparently with the most satisfactory results. Look at the open gates of our great National Garden at Kew. See how proudly the people flock into their garden, for they feel that it is a kind of freehold which they are bound in honor to protect. That they behave themselves well, and that little damage is ever done to the plants, is satisfactorily shown in Sir Wm. Hooker's Report.—ROBERT FORTUNE, in *Gard. Chron.*

Foreign Intelligence.

RUSSELLIA JUNCEA CULTURE.—*Russelia juncea* is a stove plant from Mexico, and one of the most graceful plants in cultivation. It requires a compost of equal parts turfy loam and fibry peat, chopped with a spade, but not sifted unless through a riddle with inch meshes, and a liberal admixture of silver sand. We presume yours is a small plant; if so, pot it and keep it in a moist atmosphere to induce free but not luxuriant growth. Shift into a pot a size larger, immediately the roots reach the sides of the pot. Repeat the same until the plant attains the size you wish, when you will give the last shift, double the sized pot of any of the former being employed. When this pot becomes full of roots the plant will show flowers; but much will depend on pinching the strong shoots back when they are a foot in length. The branches may be tied to a stick, from which the laterals droop gracefully. It flowers more abundantly on moderate than luxuriant growths. You will, therefore, stop all strong and rampant growths, encouraging the weaker until growth begins to slacken, when stopping will be discontinued and syringing too, the plant being kept drier at the root and less moisture given above. Any straggling blooms to be removed if they appear whilst it is growing. Sudden changes of temperature are inimical to its well-being; and it rarely does well after flowering once, consequently young plants must be ready to grow on to supply a worn-out specimen. It is easily propagated, either by single joints of the shoots or cuttings in a little bottom heat, or from suckers and division.—*London Cot. Gar.*

GLADIOLUS at the London Horticultural Society's fall exhibition:

Of these there was a fine display from various growers, whose best varieties were Madame Vilmorin, pink, striped with purple; Lord Raglan,

salmon, with dark blotches on the under petals; Othello, deep crimson scarlet and yellow; Oracle, rose striped with carmine; Princess Clotilde, rosy salmon, striped with purple; Napoleon III., scarlet, with a yellow throat; Le Poussin, very handsome rosy salmon, with a clear white centre; Madame Haquin, white, striped and flushed with lilac; Mazeppa, large red and yellow; Jeanne d'Arc, French white, striped with purple; Brenchleyensis, glowing crimson scarlet; Endymede, large rosy salmon; Mrs. F. Rouget, like the last, but darker; Madame de Vetry, white striped with crimson; Queen Victoria, white flushed and streaked with purplish lilac; Madame Basseville, salmon with white blotched under petals; Penelope, delicate pink striped with purple; Madam Souchet, pink stained and streaked with crimson; Mrs. Reynolds Hole, carnation striped white; Prospero, crimson scarlet; Impératrice Eugénie, a splendid kind, white, striped and suffused with rosy lilac; Etna, scarlet; Mrs. Dix, white, striped with purple; Charles Davis, crimson streaked with purple; Brian Born, scarlet streaked with violet; Roscius, large showy rich salmon, streaked with violet; and Comte de Morny, crimson and white.

THE OLDEST ROSE TREE.—A botanical as well as an archaeological curiosity is seen now at Hildesheim, in Germany. Ancient legends connect, if not the foundation of the city, at least the foundation of its see, by the Emperor Louis the Pious, the son of Charles the Great, with a certain wild rose-tree, which is supposed to have stood in its present place on the cemetery of the Deme long before even those days. Although documentary evidence as to its existence in Charles the Great's time is wanting, it is yet distinctly mentioned in a document of Bishop Hezilo, who in 1078 carried a fence around it. There is no doubt whatever that it is the oldest rose-tree in Europe; and for centuries it has attracted the attention of naturalists in a high degree. But the most extraordinary circumstance is this, that two new shoots have come out of the root in the course of this summer, the one of which has already reached a height of twelve feet, and at its diameter measures no less than an inch near the root. There is an interesting account of this tree in Mr. Rivers's invaluable "Rose Amateur's Guide."

TWELVE MILLION BUTTERFLIES.—In the canton of Basle, no less than 12,000,000 butterflies have been caught this year, and the Government has paid the catchers the not inconsiderable sum of

1,000,000f. Naturalists tell us that of every hundred of these beautiful insects forty-five are females; and as each of the latter is estimated to lay, on the average, forty fruitful eggs, the destruction of these 12,000,000 is virtually the same as the annihilation of 216,000,000 caterpillars.

PARIS FLOWER MARKETS.—Paris is about to be enriched with another flower-market, to be established on the Boulevard Richard Lenoir, between the Bastille and the Fountain of the Boulevard du Temple. The sale of flowers and shrubs, which now constitutes an important branch of commerce in Paris, was until of late years of no great value. Gardeners in former times did not possess the variety they do at present, and they sold the few flowers they cultivated at the Marché-aux-Poirées or at the Pont Neuf. Their collection comprised only the native Violet and Rose, the Ranunculus of the Archipelago, and the Damascus Rose, imported during the reign of Louis IX.; the Lilacs, imported from Persia in the 16th century; and the Pinks, of which Rabelais brought the first from Italy for his friend Cardinal Estissac. In the reign of Louis XIII. some Spanish woman gave the Paris flower-market an additional attraction. The Parisian corporation of flower-sellers would not be surpassed, and in the following reigns the market on the Pont-Neuf acquired considerable importance. The French gardeners had by this time increased their stock by the Japan Tulip, which they received through Holland at the beginning of the 17th century, the Narcissus from the East, and the Hyacinth from Constantinople. The cultivation of flowers was thenceforth considerably extended, and Mignonette and the Bengal Rose were imported into France toward the conclusion of the reign of Louis XV.; the Dahlia was sent to Paris in 1702 from the Botanical Garden of Madrid, which had received it from Mexico two years before. Some years later a French captain brought another new plant from China, which he called Hortensia, after his wife Hortense. Since then various exotics have arrived in such abundance that many plants which were at first received with favor are now neglected. Towards the end of the last century the Pont-Neuf was no longer sufficient for the ever-increasing number of dealers in flowers. The market spread over the Quai de la Ferraille, and in 1808, the carriage way being completely blocked up, it was transferred to the Quai Desaix, in the island of the Cité. In 1824 the number of flower-markets was increased to four, and there is an additional market about to be established at present.—*Times*.

NORTHERN SPY APPLE IN ENGLAND.—The London *Gardener's Chronicle*, says:

"Finer flavored specimens we never tasted of this, the most delicious of United States Apples, as well as one of the very finest of table varieties. We prefer it to the best Newtown Pippins."

BIRD MURDER.—We commend the following, from *Punch*, to the attention of our 'Robin killers,' who will soon be in season, and more numerous, we fear, than the "three men of Crawley:"

Who killed Cock-sparrow?

"I," said three men of Crawley,

"With my club in my mawley,

I killed Cock-sparrow!"

Who saw him die?

"I," said Caterpillar,

"And I blessed sparrow-killer,

As I saw him die."

Who'll dance on his grave?

"I," said Mr. Slug,

With Green-fly and Red-bug,

"We'll dance on his grave."

Who'll weep for his loss?

"I," said young Wheat-shoot,

Fruit and Flower-bad and Root,

"We'll weep for his loss."

MUSHROOM HOUSE.—This, when sufficiently roomy, is one of the most useful structures about a garden. Seakale may be forced here in constant succession with as little trouble as raising a crop of small salad. The old plan of raising a bed of fermenting material, over the crowns out of doors, is an uncertain process compared with this. It is equally well adapted for Rhubarb forcing. Nothing is needed but a long, narrow pit along the bottom of the house, on one or both sides, the top of the pit to be level with the floor. It should be four feet deep, and filled in portions as wanted, with any hot, fermenting material, to within half a yard of the top, which would be very perfect if covered with a lid. The Kale and Rhubarb should be placed on the surface of the fermenting matter as thick as it can stand, and then filled in lightly with soil or fine old tan. Chicory roots may be placed in a circle round roomy pots, and set on the flues of this house. Lily of the Valley, too, may be plunged overhead in a fermenting bed of 70° here, until the blossom-spikes appear, when it must be inured to light, but in the most gradual and cautious way imaginable. Early potted Hyacinths

and Narcissi may also be treated precisely the same as the Lilies, taking care not to withdraw them until the pots are nearly full of roots, and many other uses may likewise be found for this house.

GIGANTIC AUSTRALIAN TREE.—In a gorge on the declivity of the Mount Wellington range, near Tolossa, about six miles from Hobart Town, a tree of the blue gum species was found to be 84 feet in circumference.

LANGUAGE OF INSECTS.—A most singular discovery, the credit of which appertains, we believe, to Mr. Jesse, is that of the antennal language of insects. Bees and other insects are provided, as everybody knows, with feelers or antennæ. These are, in fact, most delicate organs of touch, warning of danger, and serving the animals to hold a sort of conversation with each other, and to communicate their desires and wants. A strong hive of bees will contain thirty-six thousand workers. Each of these, in order to be assured of the presence of their queen, touches her every day with its antennæ. Should the queen die, or be removed, the whole colony disperse themselves, and are seen in the hive no more, perishing every one, and quitting all the store of now useless honey, which they had labored so industriously to collect for the use of themselves and the larvæ. On the contrary, should the queen be put into a small wire cage placed at the bottom of the hive, so that her subjects can touch and feed her, they are contented, and the business of the hive proceeds as usual. Mr. Jesse has also shown that this antennal power of communication is not confined to bees. Wasps and ants, and probably other insects, exercise it. If a caterpillar is placed near an ant's nest, a curious scene will often arise. A solitary ant will perhaps discover it, and eagerly attempt to draw it away. Not being able to accomplish this, it will go up to another ant, and by means of the antennal language, bring it to the caterpillar. Still, these two, perhaps, are unable to perform the task of moving it. They will separate and bring up reinforcements of the community by the same means, until a sufficient number are collected to enable them to drag the caterpillar into their nest.

THE POPE BLACK HAMBURG GRAPE.—The 'Pope' Grape is another kind of Black Hamburg, which is well worthy of culture from its being the earliest and sweetest of the numerous varieties of this really useful and most generally grown vine. It is the only kind of Hamburg grown by Mr.

Robertson, at Swinnerton, near Stone, in Staffordshire; and we have seldom seen finer crops than he obtains. The bunches are large and handsome, and black as jet; and the berries, although not so large as what is called "Wilmot's Victoria," are better flavored. The "Pope" Grape is the best forcing one we have ever tried, being a free grower, an abundant bearer, and becoming well-flavored, even when ripened in February or March. It is the best of its class to plant in small houses for producing early crops.

COMPETITION IN FLOWER BEDS.—The London Horticultural Society consider much interest would be taken in the Garden at South Kensington, if portions were set apart as exhibition grounds of bedding plants, flowers, shrubs, &c., let out to responsible nurserymen and florists of eminence. They accordingly have prepared a plan of such portions, which may be seen at the Gardens, and invite tenders for filling such spaces with bedding or other plants during each month of the year 1864. The selection and arrangement are to be left entirely to the taste of the exhibitor, provided they shall be in keeping with the general character of the Gardens. The beds so planted must be kept in order throughout the season by the parties planting them. The names and addresses of the nurserymen and florists will be placed conspicuously upon the beds so filled by them. A competent Jury will be appointed to examine the spaces two or three times during the season, and will adjudicate upon the merits of the several arrangements, and select the best. The test of merit, we are informed, will be the best arrangement of color with plants that will remain longest in flower. Certificates of merit will be awarded to the most successful competitors.

WEeping OAKS.—The most distinctly pendulous oak is *Quercus pedunculata pendula*, a very lively tree, combining grace with majesty. The weeping Turkey oak, *Q. cerris pendula*, is a great beauty.—*Gardener's Weekly*.

CHARLESWORTH TOKAY, A GOOD LATE GRAPE.—Next in importance to having Grapes early, is having them to keep late; and, after trying several experiments, we have found the Charlesworth Tokay to keep longer without shrinking than any we have grown. Its flavor is very similar to the Muscat of Alexandria, and from its being of a more robust habit and setting freely, it is a more desirable vine. The Muscat of Alexandria, grafted

upon the White Tokay, keeps its fruit longer in a plump state than when on its own roots, which we believe, is owing to the latter being a strong rooting Vine, which grows very late in the season. We have the White Tokay here as a stock for the Muscat, with leaves still upon it (January 8th;) while the leaves of the Muscat grafted upon it have ripened perfectly and fallen more than a fortnight. The fruit upon the grafted vines are of a beautiful amber color, and quite fresh; while those on Muscats of the same age on their own roots are shrinking.—*Lon. Cottage Gar.*

THERMOMETERS.—The difference between Reaumur's and Fahrenheit's Thermometers is as follows: In Reaumur's scale the zero is fixed at the freezing point of water; and between that and the boiling point there are 80°. In Fahrenheit's scale the zero is 32° below the freezing point of water; and between the freezing and the boiling point, the scale is divided into 180°. Consequently 80° Reaumur is equal to 180° Fahr.; 8° R.=18° F.; and 1° Reaumur is equal to 2½° Fahrenheit. Degrees below freezing, according to Reaumur's scale, should be marked (—); thus, 23° Fahr. or 9° below the freezing point, would be—4° Reaumur. Here we may add, that degrees below freezing, according to the Centigrade scale should be also similarly marked, but when the temperature falls below the zero of Fahrenheit's scale; the degrees should likewise have the minus sign (—) prefixed.

PEST VERBENAS AT THE LONDON HORT. SOCIETY SHOW.—The *London Cottage Gardener* says of the exhibition last fall:

Of these there were several interesting exhibitions, in which were fine trusses of Emperor of Morocco, plum with white eyes; Ida, rose; Rosy Morning, bright rose with white eye; Count Orsini, purple with white eye; Lord Leigh, scarlet with white eye; L'Avenir de Ballant, delicate pink with rosy eye; Annihilator, crimson with white eye; Mrs. Moore, deep violet with white eye; Mauve Queen; Modesty, purplish crimson with white eye; Ruby King, salmon red; Startler, crimson with white eye; Rubens, like the last, but a shade or two darker; Countess of Bradford, lavender; and Fairest of the Fair, white with purple eye; all valuable show varieties.

WASTE OF HEAT IN GLASS STRUCTURES.—“London has shown that every square foot of glass cools a cubic foot and a quarter of enclosed atmosphere per minute, as many degrees as the inner

temperature exceeds that of the outer air; so that, assuming the heat inside to be 66°, and the outside 41°, every 100 superficial feet of glazing would depress 125 cubic feet of air. 22° every minute, and the largest body of atmosphere would thus be rapidly reduced to the external level but for the warmth artificially generated within.

The plea upon which the better and more substantial principles of construction observed in the plant-houses of the last century has been departed from, seems to be that of obtaining more light, but it is, in fact, a groundless argument, for light is so extremely diffusive, that, as illustrated in the Pantheon, at Rome, a single foot of glass will illuminate, in an agreeable manner, 2000 cubic feet of space.

With this fact before us, we may safely have walls on the north and east sides; and if the roof be also of opaque materials, to act as a reflector on these quarters, and transparent only on the south and west, the heat acquired during the day will be sufficient to exclude frost in the night, except in seasons of intense cold; and the contemptible flimsiness of appearance, now so general in the structures, will be obviated.”—*London Cot. Gar.*

THE COTTON PLANT IN ITALY.—A Report from Royal Commissioners, has lately been presented to the Italian Government, on the cultivation of the Cotton plant in Southern Italy. About 80,000 bales of cotton have been grown during the past season in the latter district, including Sicily. This quantity would, it is said, have been trebled, had it not been for the excessive drought that prevailed. The attempts hitherto made to grow the celebrated Sea Island Cotton have failed; the quality produced is, however, very good, returning a profit to the cultivator, at the present price of cotton of 20l. an acre.

A feature of the Report is the favorable nature of a vast area of Central and Southern Italy for the growth of cotton. There is very little doubt that Southern Italy alone could easily furnish 550,000 bales of excellent cotton annually, which exceeds by 50,000 bales the quantity produced by South Carolina. The insignificant quantity of cotton now grown in Italy is the more remarkable, when it is remembered that during the last century it was cultivated as far north as Tuscany, and was so abundant that during the wars of Napoleon I, and the continental blockade, Italy supplied almost the whole of Europe with cotton. The plant was especially grown around Naples, and was known in commerce as Castellamar cotton.

PENNSYLVANIA HORT. SOCIETY.

MONTHLY DISPLAY, JANUARY 12, 1864.

Our best gardeners are rather sly of the icy blasts of the new year, and are loth to bring their choice plants out into the wintry air. The January meeting generally presents little of interest in plants, except designs, baskets of cut flowers, and the like. Some fine specimens of handiwork in this department, graced the Society's tables, as the following awards of premiums indicate.

To Mr. J. Pollock, (gardener to James Dundas, Esq.,) first premium for table design, special premiums for two beautiful plants of *Cypripedium venustum* and insignis, finely trained and laden with bloom.

To Mr. James Eadie, (gardener to Dr. James Rush,) first premiums for basket of cut flowers and hand bouquets.

Mr. F. O'Keef, (gardener to Joseph Harrison, Esq.,) who exhibited a hanging basket, a very pretty object, in the shape of a wasp nest, took the second premium for basket of cut flowers. Also a special premium for a new style of table design, the form of a large truncated cone, composed of lycopodiums and selaginellas, dotted over with camellias, azaleas and roses. This was a very attractive and novel composition, and the idea is capable of many pleasing modifications.

A light, graceful floral ornament, for the parlor or dinner table, presented by Mr. Dreer, attracted a crowd of admirers. It was made of open wicker-work, like slender wire, blackened, gilt and varnished, containing three or four small baskets or vases each, holding a pretty group or bouquet of choice and brilliant flowers. It was not less tasteful and pleasing in effect than novel and graceful in design, and received a special premium from the committee.

To Mr. E. Satterthwait, second premiums for hand bouquets, and first premium for winter pears, six good specimens of Easter Beurré.

Messrs. Haller & Samuel, Second Street, above Noble, brought a collection of fruit, put up in water only, of a very fine quality; also, green corn, on the cob, in air-tight jars, the air being exhausted by an air pump of their own invention. We are promised a full description of their process, for publication.

Mr. P. S. Bunting had a dish of winter pears, and Mr. W. E. Pettit a half dozen Niles pear, of which mention is made in our notes of the discus-sional meeting. The committee report it as "certainly the most beautiful of all our winter pears, and in quality, very good."

To Mr. Thomas Meghran, (gardener to Girard College,) was awarded the regular premiums for forced lettuce and celery, and special premiums for mushrooms, and remarkably early, perfect specimens of cucumbers, the first ever shown before the Society, at this season; February being the earliest date of any previous display of this delicious vegetable. The bright yellow blossoms, attached to the stem of each sample of the fruit, gave them a fresh and attractive appearance. Mr. Meghran's skill in this department is unsurpassed.

A rustic flower and fern stand, in two parts, of artistic design and creditable workmanship, by Mr. T. C. Bayliss, complete our report of this small but excellent exhibition.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA

The Annual Meeting was held in Norristown, on the 18th of February, pursuant to public announcement, and was well attended, by members from a distance. The citizens of Norristown, themselves, took no interest in the proceeding,—though one of the largest towns in the state, boasting of three or four newspapers; and though the Society advertised its coming freely, in all the borough papers—and many of the members paying their two dollars for dinner, supper and breakfast of the roughest kind, and with the extra privilege of being turned out of the hotel at bed time, to hunt a bed wherever they could, with the thermometer at Zero—all these sacrifices to learn the experience of the Norristowners, in fruit culture, and give the members' in return, brought but four or five of these gentlemen to the rooms.

Judging by the appearances of the town, the inhabitants have voted Horticulture as fit only for the next generation; and altogether, if there be any merit in preaching the gospel to the heathen, the pomological missionaries, who risked themselves in Norristown on that particular occasion, deserve the applause of all the rest of the United States.

Some forty members reported at roll call, and many more came in during the meeting. Mr. Rufus A. Grider, of Bethlehem, the President, made the opening address, which possessed so much interest, particularly in grape culture, that we make no abstract of it, in the hope of finding a place for it entire, on some future occasion.

Previous to the appointment of the business committee, Mr. W. Saunders called the attention of the Society to the great want, in most associations of the kind, of a proper direction to their investigations. The effort should be to deduce some general principle from all the various experiences

detailed. Some ploughed and some harrowed; but few could tell what object they proposed to gain by these operations. Thus it seemed to the public, that the experiences brought out by these meetings, were contradictory, when in reality, we did not know the separate objects of each. One man manured his orchard, and it did well—another did so, and it ruined it. Probably in the one case, the trees were starved, and the manure helped them; in the other case, they were growing well enough before, and the manure overdone it. This, he said, was merely to illustrate how important it was to have a method and principle to work on, so as to know to what object cultivation was directed.

The meeting then proposed to discuss the question,

WHAT IS CULTIVATION?

Mr. A. W. Harrison said cultivation resolved itself into two divisions. 1st. Mechanical. 2d. Nutritive. The first had, for its object, the improvement of the texture of the soil, by underdraining and pulverization; the second, by adding to the soil the elements taken away or required for the perfection of the growing crops. Thought all soils improved by underdraining: even sandy soils are rendered by it moister in summer, by the condensation of the moist air drawn through the soil to the underdrains. The object of pulverization was to present new surfaces continually to the action of the air. Air and moisture must act together before the oxidation necessary to prepare plant food can go on. The soil must be so pulverized that the particles must just touch. If too wide apart, moisture cannot act with the oxygen. If we examine a pile of round iron balls, we find rust only where the balls touch. The great object of cultivation, in its mechanical sense, was to pulverize the ground into as many small surfaces as possible, and then to provide for a continued current of fresh air and moisture through it.

Mr. Satterthwait said some soils could be injured by pulverizing too much. The particles would grind so very fine, that neither air nor moisture could go through.

Judge Knox agreed with Mr. Satterthwait. Soils that, in common language, 'bake,' do so through a tendency to this over fine pulverization.

Mr. W. Saunders, also, inclined to this view. Yet thought no one could go wrong if he knew his object. If we want air and moisture in the soil, and if it is too heavy for it, pulverize; but if the other extreme, pulverization, which when wet makes mud, obstructs air and moisture—stop the practice. With a clear object one could not go

wrong. One might say, manure was good for soils; but if we wanted leaf growth and succulency, as in the cabbage, we wanted one kind and quality; but if we wanted sound wood and fruit, as in the orchard, manure is quite another question.

In answer to a question, Mr. Saunders added, that his rule for covering seeds, was to regulate it by the seed. A seed $\frac{1}{4}$ inch in diameter, to receive a $\frac{1}{4}$ inch of covering; $\frac{1}{8}$ inch, $\frac{1}{8}$ of soil, and so of all others.

Mr. Samuel Miller mentioned a singular instance of a grape vine, that had extended its roots deeply in a stiff clay subsoil, which was saturated with water in winter time, and in which little air could penetrate; that was one of the best vines he knew.

Mr. Satterthwait was sure there was as much money lost by some persons in cultivating too much—uselessly—as by others who did too little of it.

Cultivation dealt in compromises. There was no doubt, as a rule, it was bad to injure the roots—cultivation always, more or less, injures roots; yet corn never cultivated, left with its roots to run uncut in stiff hard soil, would not do as well as corn which had its roots a little disturbed by the cultivator.

Mr. Gustavus Heines thought it would be difficult to lay down rules that would apply to all. Objects were so very numerous; and soils so varied.

Dr. Opfelt explained the principles of root pruning, when judiciously performed, it had great advantages. If one long root were cut at the point, a dozen or more roots branched out in various directions, and by just so many were added sources of food to the tree.

Mr. S. Miller had seen much evil from much cutting of surface roots. In his orchard, the largest trees were where the trees were never cultivated, and simply top-dressed. The finest crops of raspberries with him, were invariably, where the roots were unmolested; additions being simply made on the surface.

Mr. Satterthwait had found immense benefit from these surface mulchings.

Mr. Heines would never, under any circumstances, stir about the roots of his vines. Mulches heavily on the surface, and has the most decided success.

Mr. Josiah Hoopes opposed dry mulch, which had for its object, the mere shading of soil. It was more favorable to mice and insects, than to vegetation. The greatest advocates of mulching for these objects, had to abandon their practice.

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Hints for May.



FLOWER-GARDEN AND PLEASURE-GROUND.

The month of May having come, there will no longer be any dread of spring frosts, and their disastrous consequences to tender plants; and green-houses, cellars, frames, and every little nook and corner, where plants have been preserved through the winter, will speedily be emptied of their contents. Many of the flower-beds have been filled with Hyacinths, Tulips, and other spring-blooming bulbs. Unless very thickly planted, the summer-blooming border plants may be set out of their pots in between these—that is, if they have done flowering. Tulips will probably scarcely have had their bloom over, and must remain longer. If any pressing necessity exists to remove such bulbs, with care they may be transplanted, watering the soil before and after transplanting. They can then be put in any spare spot where they will not be in the way for a time. Transplanted bulbs, however, seldom bloom so well the next season. It is very important, where this is an object, to retain the foliage fresh to the latest possible period.

The first week in May is usually the time to set out Dahlias. They do best in a trenched soil, say 18 inches deep at least, and prefer cow-manure to any other when it can be obtained. If planted on thin or dry soils, they will not bloom till near the approach of frost, when the chief enjoyment of the Dahlia is lost. It is best, where possible, to plant a duplicate of each kind.

Tuberoses should also be planted this month, but they like a warm rich sandy soil; though, like the

Dahlia, they do not like dry soil. As a rule, Tuberoses that flowered last fall will not do so this, but the offsets will do so the year after.

Amaryllis formosissima, or the *Jacoea lily*, flowers usually very beautifully in the open border in August, and should now be planted. Many kinds of annuals that have been raised in pots or boxes, in windows or frames, should be transplanted into the open ground whenever the weather is favorable, that is showery or dull. The pots containing them should be well watered before the plants are lifted, and the soil into which the seedlings are planted is best dampened, or what is perhaps better, well watered the day before, so as not to require a heavy watering immediately after the seedlings are planted. Too heavy waterings render the ground hard, and this, when dry, becomes unsuitable to the growth of plants.

In transplanting any thing that has roots large enough to admit of the practice, it is best to dip the roots, immediately before planting, into water. This will obviate the necessity of after-watering, and its consequent injurious effects. If the plants appear to flag, shade or put an inverted flower-pot over the plant for a few days; if this does not bring the plant to, it must have water.

Trellises and stakes for climbing plants and vines should be put in at or before setting out the plants. These plants always seem to grow with more freedom and vigor when they can find something at once to cling to. Climbing vines add greatly to the interest of a garden. They can be trained into all sorts of forms and shapes; and many of them, for gracefulness of form, or beauty of their flowers, cannot be excelled by any other tribe of plants.

Evergreen shrubs, such as *Mahonias*, *Yews*, *Eunonymus*, *Tree Box*, etc., should be planted only on the north side of buildings, fences or screens; or under the shade of trees or bushes. The great danger in the latter case is, that they will become too dry in summer, by the roots of the trees abstracting so much moisture from the soil. This is the

common cause of failure with the *Rhododendron*, *Kalmia* and similar evergreens, which it is often attempted to grow under the shade of trees. In this case the proper course of procedure is to dig out the bed previous to planting the evergreens two feet deep; filling in or mixing with the natural soil some spongy or fibrous material. This will keep the soil moist and cool through several summers, until the roots of the covering timber, attached to so much loose and moist soil, will be pretty troublesome. When this trouble arises, the way to proceed is to dig out all around the mass of evergreens two feet deep, severing all the roots that have interloped from the trees—and this should be repeated every few years, or as often as the soil seems to suffer from drought through the summer season. By this care, which in practice is found very trifling, evergreens thrive with a vigor and beauty in our climate that is truly surprising.

FRUIT GARDEN.

The most paramount question with the fruit gardener is the destruction of insects. We have to confess to a belief that all schemes for their wholesale destruction have proved failures, and that our best hope is in their individual destruction. The different kinds of moths and flies may be entrapped by the thousand, in a persevering employment of wide mouthed bottles of sweet liquids hung about the trees. The *curculio*, whose most tempting allurements do not lie like moths in the way of sweet food; but in finding a nice juicy nidus for the deposit of eggs wherewith to perpetuate its species, can be slain by the hundred, by perseverance in the shaking process. A snag, made by sawing off a small branch a few inches from the main trunk of the tree, should be secured on each, on the point of which to hammer, or otherwise the bark of the tree would be irreparably injured. With a sheet spread under the tree, and a sharp, quick jar with the hammer, all the pests then on the tree may be secured and destroyed. They are rather lazily inclined, but still a few will come from your neighbor's trees; but a few jarrings occasionally will keep them down. Experience has shown that this course, which only demands a little labor, is much more effectual than the thousand schemes that have been devised for hanging various charms about the branches, and then kneeling down and crying on Hercules for assistance.

Where water can be commanded, there is nothing so profitable as to well soak the soil about small fruits; first about the time that they have set

their fruit. Much of the value of this operation, however, will depend on the nature of the soil. The advantages are least in a tenacious, and greatest in a porous soil. It is said that an animal derives most benefit from food when it is hungry before it begins to eat; it is certainly so with plants. Water applied to soil already wet is an injury; and water never has so telling an advantage on vegetation as when every leaf is about to wither up for want of it. A plant that never seems to want water is in a very doubtful condition in regard to its health.

When the strawberry crop is about to ripen, mulch with clean straw, to prevent rain soiling the fruit. Short grass from the lawn is often used; but it mildews as it decays, and detracts from the flavor of the fruit. Hot suns increase flavor, and strawberry tiles were once in fashion to put around the hills, which, by absorbing heat, added greatly to the fruit's rich quality. All that we have said of strawberries supposes them to be fruited on the hill system, with the runners kept off. Those who desire the best results, will grow them no other way.

In summer pruning or disbudding, it is also worth while to watch for shoots pushing stronger than others, and always take them out. This is the only way that shoots of equal strength can be encouraged in every part of the tree. This is particularly true of grape-vines. If a shoot once get the start of the others in strength and vigor, the others will gradually get weaker to the other's increasing luxuriance.

Watch all young fruit trees against bearing too abundantly while young, or the first season after planting. There can be no objection to the ripening of one or two fruits on a tree the first season of setting out, in order to test the kind, or to administer to curiosity, if the tree be otherwise growing freely. If little growth is making, no fruit at all should be permitted. It is a better practice to disbud or take out soon after shooting all shoots that are needless to the perfect shape of the tree, than to wait till fall or winter. The pruning-knife need then only to be used to shorten a branch into where several branches are desired to push, or to induce a more vigorous growth from the pruned parts. In the gooseberry, raspberry and strawberry also, no more shoots should be suffered to grow than will be required to bear the next season.



VEGETABLE GARDEN.

Melons, Cucumbers, Corn, Okras, Squash, Beans, Sweet Potatoes, Lima Beans, Peppers, Egg-plants, Tomatoes, and other tender vegetables that do not do well till the sun gets high and the ground warm, should go into the soil without delay.

Bean poles should be set before the beans are planted, and near cities, where they are comparatively high priced, their ends should be charred. This will make them last some years.

Drumhead Cabbage, Savoy, Red Cabbage, Autumn Cauliflower, and other kinds of fall greens, should be put out at once. The soil can scarcely be too rich for them.

Keep weeds of all kinds down from the time they first show their seed leaves. It not only saves labor "in the end," but the frequent stirring of the soil vastly serves the crop. Sow a succession of vegetables every few weeks—sometimes insects, sometimes frost, or occasionally other accidents will cut off a crop, and then there is some chance for its successor not wholly to disappoint.

GREENHOUSE PLANTS, &c.

The plants here will soon be pretty much thinned by the demands of the flower garden, and pleasure grounds—the cellars and window-frames will give up their proteges, and a grand renovation of all things will have taken place. Nothing gives a more happy appearance to a pleasure-ground than to have the walks and particular spots about it lined and studded with Aloes, Oranges, Pomegranates, Lemons, and similar tropical plants, set out in tubs or large pots for the summer. The scale insects often prove great pests. These are easily destroyed by syringing the plants with soap-suds heated to 130°. This was discovered many years ago by some cultivator of Pine-apples in England, but seems to have been lost to the knowledge of our modern cultivators.

Azaleas, Heaths, Rhododendrons, Camellias, and other tender-rooted plants, are often irrecoverably injured by being too long exposed to the hot suns under glass. If they are liable to such exposure, it is better to whitewash the glass, which will admit light without heat, and in some measure protect them. A very good plan is to prepare a piece of ground in the open air in such a way as most nearly approach the kind of soil the different plants most delight in, and then, about the second week in May, turn them out of their pots into this prepared border. They will, of course, have to be lifted carefully into pots again early in the fall.

A shaded place should be selected for those which inhabit the more temperate climes, and for the citizens of the tropics the full sun will be much more desirable. For this open ground cultivation of choice plants, a shady spot does not mean under a tree, as the roots, and the drip, and the confined air, and the want of light, existing under such circumstances, are injurious.

Communications.**NOTES ON THE GRAPE.**

BY G. HEINES, DOWNTOWN, PA.

According to your wish, I communicate to you my way of planting and pruning the Grape vine.

Having procured the vine, I cut it back to two buds, and plant as follows: I dig the hole deeper than wanted, put into it a good forkful of fresh horse manure, upon that about an inch of good soil, and then the vine, tramping all firm. After the buds have started, I select the strongest and train perpendicularly, leaving the other to run upon the ground. In the following fall, (November) I cut down the upright cane to two buds, and the horizontal to one. Next year I select again the strongest shoot, and train perpendicularly, leaving all others to run upon the ground. In the fall, I bend down the upright cane, (if strong enough to bear, if not, I repeat the operation of last year) to the lowest rail of the trellis, cutting back all others to one bud as before. The third spring I do not tie up the bearing cane until all the buds have fairly started. Selecting, as before, the strongest cane from the buds, at the base of the vine, I tie it as near perpendicular as possible, leaving the others to run upon the ground as before. The bearing cane I pinch very little indeed, or not at all. In the fall, of the third year, I cut down this (bearing) cane to within 2 or 3 inches of the ground, laying down the cane, which I trained perpendicularly to the lowest rail as before, leaving it to bear the next year, and cutting all other canes to one bud. This principle I carry out in the following years. I allow no cane to grow higher than 7 feet, but I often select two or three of the strongest buds at the base for bearing wood, making my choice of numbers according to the strength of the vine.

It is now nearly five years since I started this plan, and thus far I have had always more wood than wanted; but I think my experience not sufficient, since ten years are required to test any mode thoroughly. I offer this for what it is worth.

STRIKING CUTTINGS.

BY "ENTHUSIAST" ADRIAN, MICH.

Let me tell your readers my plan for striking cuttings—whether used by others or not, I do not know. It is certainly vastly superior to any other method I have tried. It is simply to plunge the slips in sawdust; cut off fresh young shoots, cut smooth with a sharp knife below a joint; insert one or two joints in the sawdust; wet thoroughly and keep wet; cover with a pane of glass and you will hardly lose a cutting. Half rotted sawdust is better than the fresh—and that from a planing mill is better than the finest dust from a common saw. Fuchsias, Calceolarias, Begonias, Passifloras, Abutilons, Cissus, and, in fact, nearly all greenhouse and hothouse plants root thus with the greatest readiness. Roses, with me, always do best in a common hotbed, with light waterings. Pelargoniums should be in a separate pan, so as to receive less water than the most of cuttings need. I would recommend the sawdust to the ladies especially; for it will allow you to pull up the slip, as ladies like to do, to see if it be really rooting. However, this curiosity may be pushed to an excess. Sawdust is so light and loose that the roots run with the greatest ease and spangle out beautifully. Another advantage is that in removing the rooted cuttings you do not need to break any of the finer rootlets. These each hold on to its bit of wood, and if you pry out instead of pulling the plant, you have every fibre sound. Sawdust is also a neater medium than sand or mud. It is light and easily moved. It will not injure a fine fruit or sauce dish, or an open jar. It will well repay the amateurs to try a few cuttings from mere curiosity.

Now a word for the Fuchsias. If any one wishes a select list, let them try the following:

Lord Elcho, very large, purple; Mad. Corneilson, double white; White Lady, exquisite; Governor General, very fine habit; Rose of Castile, old, but good; Count Cavour, mauve colored; Sir Robert Peel, amaranth, colored; Dr. Livingstone, blush, rose; Sir Colin Campbell, double purple; Annie, rose colored, beautiful; Meteor, fine bronze foliage; Prince of Orange, very rich dark.

The above dozen are of good habit, distinct and charming. It will be all that the amateur needs at present. It includes the best, old and new. Schiller is a fine flower, but the habit is wretched. Others are not distinct enough.

I believe it was from your magazine that I first learned the folly of pruning Fuchsias. Give them enough light and little sun—plenty of moisture and no saucers full—good drainage and good soil, and

let them grow almost as they will. A Fuchsia let alone will naturally assume a lovely form, if it have the above requirements. In cutting back old plants, cut down nearly to the soil. If they will not start from the base, they are not worth keeping.

If any of your flower garden lovers wish to enjoy themselves, let them, the coming season, plant an oriental bed—say 10 feet in diameter. Plant Cannas, Ricinus Sanguineus, Caladium Esculentum, Gynierium Argenteum, Yuccas, Acanthus, Gladiolus, a few White Lilies. In the shade under the others Gazania and Farfugium. Border with Sedum.

MAGAZINE OF HORTICULTURE.

BY H. BOSTON, MASS.

I noticed, in a recent number of *Hovey's Magazine*, an article by Mr. Hovey, on the "Progress of Horticulture;" in which he says, in speaking of Rogers' Hybrids, "that after a careful examination of them for three years, we can see nothing that should give them the name of Hybrids; as they are simply improved varieties of the kinds they were raised from, and we cannot detect the least foreign blood in them."

Now I cannot let this erroneous statement pass without making some correction. I think that it is due to Mr. Rogers, to whom the public owe so much, for not only having produced new and valuable kinds, but also for having placed in its hands the means of producing an unlimited number of kinds or varieties. And if you can allow me a small space in your valuable magazine, I would like to say a few words in contradiction to those statements.

In the first place, he says, "after a careful examination of them for three years, 'he' can see nothing that should give them the name of Hybrids." Now what is a Hybrid? Webster gives the definition of Hybrid as follows: "A mongrel: produced by the mixture of two species." Let us examine the grapes and the process by which they were obtained, and see if they were produced by the union of two species. Mr. R. took the flowers of the wild grape, a variety known under the names of Fox Grape, the Mammoth, &c., and to the botanist as *Vitis Labrusca*, and before they were quite ready to open, carefully removed the cap, which is composed of the petals joined together, then with a knife carefully removed the undeveloped stamens of each flower of several bunches; as yet no fertilization had taken place. Each pistil was then touched with pollen from the Black Hamburg. (*Vitis Vinifera*.) A small bag of cloth was then

tied about each bunch to prevent the bees interfering with the process. Now it is evident that fruit would not have been formed after the stamens were removed, if fertilization had not taken place by some other means; this has been tried and proved. But fruit *was* formed, the seeds were developed. And I ask how they were produced if not by the union of the Black Hamburg and our Wild Grape, which are acknowledged by all botanists, two different species.

But if this examination of the process is not sufficient, let us take a glance at the fruit. I have known Rogers' Hybrids for several years, and can speak of them from experience. I have also visited the garden of Mr. R., in Salem, that I might witness the operation of hybridizing, which was substantially as I have described. I was struck with the care and forethought which Mr. R. used. His politeness and attention in showing and explaining to me I cannot forget; and I take this opportunity to partially return that kindness. The plants grown from seeds produced by the hybridizing were set in a row and numbered according to their order in the row, the first one being No. 1, etc. When they fruited, No. 1 bore large bunches of large white grapes, slightly pink on one side. No. 2 proved to be a large brownish grape, the bunch being larger even than the first. No. 3 was a small, light red grape, earlier than the Hartford Prolific, larger than the Delaware and better flavored. No. 4 was a large black grape, rivaling its parent, the Black Hamburg, both in size of bunch and berry, and very much resembles it in quality. Here I have given just an outline of the first four, and they are all very different, and the same difference, or rather as great, may be found in all of his 43 numbers. Now, I ask, were there ever four seeds sown from one vine, perhaps from one bunch, that produced vines each so different from the other? A wonderful improvement this, effected in one season, which could not have been done by any other known way in the course of ages. Indeed I doubt if a wild, disagreeable, leather like skin, solid pulped, small bunched grape (3 to 6 being the number of berries in a bunch,) could ever be improved to a thin skinned melting, large bunched, high flavored fruit, and equal to the foreign grapes. And yet in these Hybrids "we cannot detect the least foreign blood." If we can't—we can foreign sap, or at any rate, foreign qualities, for I have only mentioned a few of the many evidences that they are Hybrids of foreign grapes; not only does the proof appear in the fruit, but also in the form and color of the leaves, in the stocks, and even in

the seeds, for it may be traced here. But one of the most marked proofs may be found in the flowers. I will not enter into the details, for the field is too large. But it is well known that if we raise seedlings of the wild grape, one half or more of the plants will be male, or staminate, and never bear fruit, but Mr. Rogers had 43 seedlings from his first attempt, not one of which were male plants, and all have borne fruit, more or less, like the foreign grapes. And still another proof, is his second crosses, which so much resemble the foreign varieties as to be taken for them any where, for instance, Mr. R. was showing a Scotch gardener (who has few superiors in his profession) through his garden, and came upon one of the second crosses, between No. 15 and the Rosé Chasselas. "What should you call that?" said Mr. R. "I should take it for the Rose Chasselas," replied he, and so would any one. And yet there are some men who tell the public that they have examined, and cannot see any trace of foreign blood. They must be blind. Mr. Hovey is as he always was. Downing says, "Our amiable contemporary, Mr. Hovey, of Boston, is remarkable for the pertinacity with which he stands still, while the age moves on; and presides over the past, in Horticulture, like some solemn Sphinx that once told how high the tide rose in Egypt, but has long ago been left high and dry by the progress of the ages."

[Notwithstanding our contemporary wrote, that it had given the subject "a careful examination," we believe the *Magazine* expressed the views hastily. It does not seriously believe that any one could get so many good varieties from one sowing of a lot of Fox Grapes. It would be an easy matter to raise good grapes, if these wild things submitted to the taming process so easily—and the three and five dollar vines, whether Brackett's Seedlings, Adirondacs, or any other novelty would find the occupations of their raisers gone.

On this subject friend Hovey will, no doubt, do for once what it has been pronounced impossible for him to do, make a handsome acknowledgement that he is wrong.—Ed. G. M.]

HEATING HORTICULTURAL BUILDINGS.

BY WM. SAUNDERS, WASHINGTON, D. C.

I had hoped to be able to furnish a short essay on "Heating," for your meeting on the 8th. I find I will not be able to do so, but will suggest a few important points that seems to me should be kept prominently in view by those discussing this subject.

The only superiority possessed in the water heating lies in the conducting power of water. If there is any other advantage I have failed to trace it, after using it for twenty years. But then, indirectly, this conducting property is of great importance, as it enables us to procure a considerable radiating surface heated at a comparatively low temperature. This has always been one of its greatest advantages over flue heating, but even in this respect the flue is condemned by many who never trouble themselves far enough to ascertain whether or not their condemnation will stand the questioning of common sense, or sustained by facts. It is very well known, that a properly built furnace and flue is a very proper and economical mode of heating a building. With badly built flues I make no comparison, and they ought not to be entertained in discussions of this kind. Furnaces that *won't draw* and flues that *leak and give out gases*, must first be remedied from both of these evils before they are taken for examples.

The principal question in the case of flues *versus* water, is that of economy. Taking advantage of the conducting power of water, we can warm extensive houses by one fire. With flues we can only heat a limited place with one fire. The question resolves down, therefore, to one of first cost and labor. Of course there are other matters worthy of consideration, such as the neatness of pipes and the small amount of space they occupy as compared with flues. But in many, indeed the majority of cases, the flues occupy positions that are not available for any other purpose, so that, in a general sense, this objection has no great weight.

The question is, at what point in the dimensions of a building will it be most economical to heat with a water apparatus? Supposing that the extra labor required in looking after the flues is the only difference in the economy. But that is not the only difference; and here let me remark, that there is a surprising amount of fallacy entertained with regard to the economy of fuel in heating by means of water. Let us look at it a moment. Even with the most complete boiler that human ingenuity has ever invented, it is evident that the fire or heated air must leave the boiler at a temperature, at least, equal to that of the water through which it passes. Supposing the water in the boiler to be heated to 180°, we must necessarily find that the heated air after passing through this heated water is, at least, equal to the latter in temperature. We will, in fact, find it much higher. Now here is an unavoidable loss of heat, consuming a vast amount of fuel,

which might be economized by adopting the method of flue heating.

With regard to the size of pipe, it is a matter practically of small importance. I will not pursue that point further here, only to make the remark, "Heat is the same material, however produced, and a given quantity of fuel will produce no more heat when burning under a boiler, than when burning in a common furnace." To suppose that you gain heat by simply increasing the *length* of piping, is akin to the idea that the strength of a horse is increased by increasing his load.

As remarked in my former letter to the Society on this subject, (read, I think, in Oct. 1862,) the most economical mode of warming of plant structures is by a combination of the flue, and water in pipes. Let a flue be built on the principle of diminishing its thickness as you recede from the furnace. Let the cover of the furnace be a small boiler, from which lead a flow and return pipe—this will conduct heat to any desired point in the house where the radiating surface can be increased by introducing coils of pipes. So far as heating a single structure is concerned, I maintain that this is at once the best and most economical mode of heating that can be adopted.

This is my conviction after having worked, I think, eleven different forms and modifications of boilers, and given the whole subject of heating and ventilating close study and professional attention for many years.

GARDENERS.

BY ALEX. PONTEY, GARDENER, TORONTO, C. W.

When it is intended that a youth shall become a mechanic, an artist, or a member of any of the professions, (except gardening) especial care is taken in his education, that he may learn everything appertaining to the calling for which he is intended. If he is to become an artist, the idea is early instilled into his mind, that he must be something beyond mediocrity, or it is no use becoming a painter at all—to be a mere daub, it is considered, will never pay, he must be something more than that. No man ever thinks of bringing his son up for the medical profession and stopping him in his studies just at the time he was about to commence walking the wards of an hospital. Even if any one could be so foolish, the law has provided otherwise, and enacted that you must possess a diploma of ability and capacity, or you can't practice medicine—same of law—but how about gardening? that profession which dates back to the first existence of man for

its origin. Surely if on no other grounds but its antiquity, it demands some preparation at the hands of those who are to take place in its ranks. If the man who is to embellish the walls of your mansion with landscapes, deems it necessary that in order to be fully competent to do so properly, that he should visit classic Italy and other lands renowned for their productions in the art, how much more necessary is it that the man who has to take the external landscape and bring out all its beauties, should take pains and trouble with his education.

There are a thousand things about such an occupation requiring correct taste and judgment and abilities, I think, to a higher order than those required to fill up pleasantly and artistically a few square feet of canvas with a landscape—but no! it is not generally considered necessary that the man who has to do all this should have any extraordinary preparation. What need is there for him to be put through any extraordinary course of study for this sort of thing?

Take the would be gardener as our apprentice, and how do you generally find him? As long as the terms of his indentures will admit of it, kept at all the drudgery belonging to the business, and perhaps told, in answer to any enquiries, he may make of those around him older and more experienced than himself—that he must be content to work as they have done, and learn as best he can. There seems to be a very prevalent idea that no knowledge can be imparted properly under such circumstances except through the medium of the spade or hoe handle. Out of his apprenticeship he finds himself able to command just sufficient wages to clothe and feed himself comfortably, nothing to spare to buy books with, appertaining to his business, or if he has, it must be to such a limited extent that he can get hold of only those which give him but the preface of the science he would be master of.

A very convincing proof, I think, that the gardeners themselves consider that as a body they require more knowledge, is the Gardeners' Improvement Societies, and a right good sign it is. I only hope they may do a tithe of the good it is calculated to do, if properly adhered to and supported by their members:

One object I have in penning these few remarks is, that those among us who have youths under our care who will, in probability, some day or other, take their stand in the ranks of as ennobling a profession as man can boast of belonging to; may remember, that on us, in a great measure, depends

what sort of lights these men shall be—whether they shall go out into the world fettered and hobbled with prejudice and ignorance, or whether they shall bear with them all the good we can do them by example, by precept, by admonitions and words spoken in the right way, when opportunity offers. The human mind bears a strong resemblance to the branch or twig of a tree, which ever way it is bent or warped, when young, so it will be likely to grow in after years. Then do not let us bear any of the responsibility of turning out a generation of stunted and dwarfed gardeners into the world, stunted by any old foggy practice or conceit of ours. Rather let us do all we can to originate a class of men with large ideas, minds expanded to the full extent of their capacity; this and more too can all be done by leading the enquiring mind in the pleasant paths of knowledge within our reach, and teaching those under our care to admire and learn all the wonders we can of the wondrous vegetable world we are daily engaged among.

Some of the reasons why we have not a better class of men as gardeners, are, I think, attributable to the employers. For instance—a gentleman wants a gardener, a man who can look after a kitchen garden, and a little patch of ornamental or flower garden. He mentions his wants to his friends, some one of them is sure to know a “handy man” that mayhap has been employed by him in the capacity of groom or stable boy, with opportunity of filling up his spare time in the garden. He is hit upon at once as being just *the* man, he has had the opportunity of working a few hours a day under the gardener, who by the bye thought no more of imparting knowledge to him, than he did to the lady's pet poodle—so he must know all about these matters—the place is small and the proprietor can pay some attention to the garden himself—and the man can be got cheap—so he will answer.

Very likely he remains a year in his situation, then moves off for some other part of the country, where he, of course, styles himself “Gardener,” and knows nothing, whatever, about horses or the like. Many hundreds of men coming into this continent yearly, are thus made gardeners, by simply crossing the Atlantic, and because they can find cheap gentlemen. “Save the mark,” it fosters the class, they report themselves to their associates, and the result is the profession is continually getting demoralized, so to speak by these “*quondam Grooms of the Spade*.”

That there are plenty of good gardeners, practical and theoretical men, I do not deny, but for every one of these you will find a dozen who are as

entirely ignorant of all agricultural theory, as they are of most of its practical operations. It is a very common occurrence to hear gentlemen complaining of the ignorance of their gardeners, when they know themselves perfectly well that they never have given inducements sufficient, in the way of wages, to tempt any *gardener* to go near their places.

Let proprietors of establishments make the situation of gardeners as lucrative as other situations are, where some amount of knowledge and energy is required, and it will induce a different class of men to turn their attention to it. Men then, gardeners themselves, who have sons growing up will give them an opportunity of learning the business, instead of putting them to any thing almost but gardening, as is often the case now.

I may have said things which, to some sensitive ears, may sound harsh. If I have, to such I say, I have the advancement of gardeners, as a class, at heart, and have no other wish than to see them occupy the position among men they deserve, and hope, that on this account, I shall be pardoned for anything I have said having a tendency to offend or annoy.

ABOUT THE CHENANGO STRAWBERRY APPLE.

BY B. W. STEERE, ADRIAN, MICH.

In the article on the Chenango Strawberry Apple, in December Number, 1860, by N. Collins, he says: "The C. S. Apple was raised from seed, planted many years since by a colored man, named Frank," farther on he says, "it was for a long time called the Frank Apple, subsequently it was named the Jackson Apple, and lastly the Strawberry, to which I attached the name of the county, to distinguish it from the early and late strawberries of Western N. Y."

And just here is the point to which I wish to call attention, the *name*. Pray why not call it the Frank? It was the original name, is short, sounds well, is easily spoken, and may save nurserymen many a precious moment in writing. Besides this rejecting the name by which a fruit was first known for any length of time and adopting another, every way less appropriate, is a flagrant violation of the rules of our highest authority on the subject.

The early and late Strawberries are popular here and elsewhere; should this third candidate for the name become equally so, we shall have confusion, even worse confounded.

Who that has sold trees of both the old sorts,

does not know the difficulty of even two of like name? Many of the farmers have been familiar with only one of the two, and enquire for the Strawberry, being surprised to learn there is another of the name, and must have an explanation before they know which they want. But what is their astonishment, when you inform them that there is still a third.

In addition to the above, it might be argued, that justice to the originator would require us to retain his name, although "he may not boast a skin colored exactly like our own."

I saw the fruit at our State Fair last fall, it is certainly very beautiful, and I have no doubt, at least, "very good." The trees in the nursery, as noted by Mr. Collins, are very distinct, having light drab bark, and from present indications, I believe they will prove hardy at the west.

PRIZE LIMA BEANS.

BY WALTER ELDER, PHILA'DA, PA.

At the Annual Exhibition of the Pennsylvania Horticultural Society, held at the Academy of Music, in September, last year, the two general displays of vegetables, which got the first and second prizes, were so nearly balanced to outward appearance that caused me to inspect them more minutely.

In Mr. A. Felton's display, the Lima Beans had four full grown seeds in each pod. Not one pod had less than four, while Mr. Thomas Meghran's Lima Beans had only three seeds in each pod; not one pod had four seeds. A fortnight after that, I met Mr. Felton, in H. A. Dreer's seed store, and told him what I had observed, and asked him if he thought it was in the seeds or in the culture that made the difference in the two crops. He said, it must certainly have been first in the seeds, but that good culture was essential to raise good crops. I asked him if he sowed his own seeds? he said no, he bought all his seeds. He grows his vegetables for market, and it would not pay for him to save seeds. He had tried it for some years, but the time lost in attending to them was double worth the price of seeds, besides his crop grew less every year, with his own seed.

Mr. Dreer said his Lima Beans had four full grown seeds in every pod, and some pods had five full grown seeds. Says I, a five seed Lima Bean pod must be like a four leaved clover—hard to find. Many of mine have only two full grown seeds in a pod.

Some time after that, I met Mr. Meghran, and

spoke to him as I had done to Mr. Felton, he said it was in the seeds. He had bought all his seeds but Lima Beans, as there were plenty on the place, and being his first year he planted them, and wished afterwards that he had bought a fresh lot. He had manured his grounds heavily and tilled them well, but he could not raise superior crops from seed long saved upon the same grounds. These statements of two skillful vegetable gardeners, with my own observations, substantiate the doctrine I have sought to promulgate. Fresh seeds from other lands are essential in the production of superior crops.

BLACK RUST ON VERBENAS.

BY W. CAIRNS, READING, MASS.

Hearing from all points of the compass of the destruction caused by the "Verbena disease," or black rust, as some call it, and paying a visit last fall to an infested neighborhood, I was surprised to hear the gardeners talking seriously of putting the verbena out of the list as a bedding plant. This set me to thinking if something could not be done to arrest its progress. I got some cuttings, (our collection being comparatively clear of it,) to experiment on, it was in August, and I thought, being so early, they would out-grow it. Such, however, was not the case, for about the middle of January, it was hard to tell what they were, the leaves were black and curled, and very few of them at that. I have always considered the "disease" a species of mildew, from the fact, that the same causes produce disease in the verbena that produces mildew in the grape vines and other plants, viz: extremes of cold or heat, moisture or dryness. I accordingly mixed up the old cure for mildew.

And as some of your numerous readers may not have seen it, I will give you my experience in full. Take four quarts of lime in the shell, put into a water-tight barrel, add one pound of sulphur, pour enough of boiling water in to thoroughly slack the lime, which will dissolve the sulphur, at the same time, keep the top of the barrel closely covered to confine the steam. When cold put water enough on, that you can draw off four gallons of pure water. Using one-third of the above, and two-thirds of pure water, I syringed my patients once a week for three weeks. Commencing the middle of January—by the middle of March you could scarcely find a diseased leaf—and now, the end of March, they have perfect flowers, which a diseased plant never produces.

Our collection, at one time, showed symptoms of disease, but one syringing of the above entirely eradicated them.

I notice that whenever the system of lifting old plants to propagate from is practiced, the disease appears in its most virulent form. The foregoing application can be used after the plants are in the ground, and will enable them quickly to outgrow any tendency to disease that may be lingering in their constitutions.

CHEAP HOT WATER APPARATUS.

BY H. E. HOOKER, ROCHESTER, N. Y.

Ever since the introduction of hot water for heating greenhouses, vineries, and other horticultural structures; the want of a *cheap* method of receiving a circulation of water through houses and forcing pits, has been a great obstacle, and a serious drawback upon the general use of this only satisfactory and truly economical mode of heating.

The iron pipes used in our best structures are too costly to justify their common use in vineries, Orchard houses, and the cheap buildings of our market gardeners; and cannot be put up except by skillful workmen, who are to be had only in our principal cities, or by sending there for them, at considerable expense; the smallest repair is the source of considerable inconvenience.

Wooden propagating tanks we have used for several years, and find them very useful, but they are also quite expensive when well built as they must be, to be tight, and are subject to decay.

Water Lime has been tried in various forms, but not, to my knowledge, satisfactorily, until the experiments, I am about to describe, were made. These experiments have proved that a *very cheap*, durable and simple apparatus can be made by any person of common ingenuity and fair mechanical skill—even without any professional experience, by the aid of a few simple directions in carrying out the ideas here offered. These directions are more fully set forth in the circular, which is furnished to those who purchase the right to use or construct these tanks; for which a patent has recently been granted me by the United States Government.

This expense of hot water apparatus, has heretofore been so great as to deter many from attempting to have either a greenhouse, vinery or forcing pit of any kind; for the same reason few nurserymen have had good propagating pits, and gardeners have been compelled to rely upon hot beds; which, at best, are a poor substitute for houses, in which the heat can be steadily maintained and applied as needed, without danger of the stock being scorched or frozen.

Two years ago I conceived the idea, that shallow

water lime tanks might be laid upon the soil, after leveling and making it firm without the aid of masonry or any supporting structure except the earth, and such a thin boarding as would preserve the required form whilst the mortar was becoming hard.

Upon trial I found this to be true, and the tanks so made became, in the course of a month, as hard as stone and perfectly tight.

I next constructed tanks upon the same principle for a forcing pit for cucumbers and early vegetables, connecting the tanks with the boiler of an adjoining greenhouse. This pit, 12 feet wide and 48 long, has been in use two winters, and with no heat except the *bottom heat*, supplied by the water, to the six inches of soil lying upon, and covering all the top of the tanks, has resisted the coldest weather, without mats or covering of any kind, or a visit of the gardener between the hours of 6 P. M. and 7 the next morning.

The growth of cucumbers was something marvellous, and far exceeded any hot-bed works, both for care of management and abundance of crops. Not a cent of repairs has been needed, and not a drop has leaked out that I can ascertain. The present season cucumbers are being grown after gathering a crop of lettuces, radishes and tomato plants for out-door work. All have done admirably thus far.

My next experience was with a larger house for nursery propagation; this is 80 feet long, 10 feet wide inside. The tanks are simply laid upon the soil made level, and level with the earth outside. No excavation was made, except a walk 2 feet 3 inches wide, sunk deep enough to give head room under the ridge boards.

These tanks are nearly 4 feet wide, on each side of the walk, and divided through the middle, causing the water to flow around the outside of the house and back, next the walk to the place of beginning, in all 300 feet from flow to return.

The covering of these tanks is hemlock boards, covered with water lime, to secure a dry atmosphere, and which I find is obtained as completely in this way as by means of iron pipes, and dispensing with them entirely, except a short piece connecting the boiler with the tank at the flow, and a similar piece and elbow at the return. The boiler, used in this house, is a small one, made by Wethered & Cherevoy, of New York, at an expense of \$45, located in an adjoining greenhouse furnace room; this has proved amply sufficient to maintain a temperature in the water of 110° at the flow, and 90° at the return. In the coldest weather a night

temperature of 55 to 60° has been kept, the gardener rarely visiting the house between 6 P. M. and 7 A. M. The entire cost of this house, including labor, lumber, glass, boiler, painting two coats, tanks and every item of expense, was less than \$400. which, in these times of high prices, may be called cheap—scarcely equal to the expense of an equal area of hot-beds, and so much superior, in every respect, that I am satisfied any man who has sash, can, by using them in some such way, as is described in your magazine, by Mr. Henderson, and putting in the water-lime tanks, greatly increase his profit and comfort, in growing every description of plants and vegetables requiring heat.

My houses are built somewhat in the manner of Mr. Henderson's except that I use a fixed roof, and wide ridge board, into which ventilators are cut at suitable intervals, and which, are readily accessible from the walk. This method diminishes the cost of construction, and the shade of the ridge boards falling mainly upon the walk, is beneficial rather than otherwise. The house runs north and south, and is 6 inches lower at one end than the other, by which means a gutter is formed of the cave board on each side.

Before trial I found that there would be a loss of heat from locating the tanks upon the soil, but this fear proved groundless, as will be seen upon reflection, heat is absorbed and carried readily upwards, but not downwards, and after a few degrees of heat, have been imparted to the soil in immediate contact with the bottom of the tanks, no more is taken up, but as soon as the water inclines to cool, the heat of the earth below helps to maintain the temperature of the tanks, and preserve that uniform heat which is so essential to success in propagation. A tank containing two or three inches of warm water, will warm six inches of super-incumbent soil in the most thorough and perfect manner which can be desired.

The cost of constructing water-lime tanks, 4 feet wide, in the manner of which I have spoken, here (where lumber is \$20 per M., labor \$1 50 per day for common laborers, and lime 40 cents per bush.) is 25 cents per running foot, exclusive of patent fee, it would require 4 rows of 4 inch iron pipes to give the same heating surface, and then it would not be in a form as convenient as the flat surface of the tank.

It will be readily perceived that if water lime and sand can be thus readily made to take the place of iron pipe, and if the cost of excavations and walls can be saved, and our stayings and tables for plants can be replaced by clean imperishable stone or cement surfaces, giving off a gentle heat

when and wherever required, and all at one expense within the reach of persons of very moderate means; we soon expect to see quite a change in the manner of constructing our houses, and in the number of persons who can enjoy the luxury of a greenhouse.

This season of the year finds me much too busy to enter more fully into this subject; but if your readers are as sanguine as I am of the advantage of this method of heating, they will excuse me for puffing my own wares, and prepare to have a good propagating house and a cheap one, before next winter.

A TALK ABOUT CHEAP COLD VINERIES.

BY DR. G. PEPPER NORRIS, WILMINGTON, DEL.

It may seem to you, Mr. Editor, a trite subject, and you may, perhaps, say to yourself, why everybody knows all that is to be known about them. This to you and many others, who have lived in glass houses all your lives, is true; but recollecting that it has not been so very long ago that we could only associate the subject of growing grapes under glass with large fortunes—we believe there is a very large class who are uninitiated; to these we propose to address a few words.

A cold grapery should always be provided in the latitude of Philadelphia, or further north, with the means of producing artificial heat. A flue is the simplest and cheapest, and will answer all our purposes—with this we can defy the weather and grow grapes that will compare favorably with those produced from the most costly hot water apparatus. Now we have not a word to say against hot water. To those who can say, let us have hot water—hot water let them have—it is not to them we are talking.

With a flue (cost about \$25,) and a ton of coal we are comfortable. In a cold vinery the grapes will be tied up to the wires about the first to the middle of April, in your neighborhood. Now we sometimes have pretty cold nights in April, and you will sleep sounder with a couple of shovelfuls of coal thrown into your furnace about 10 P. M. Then, again, we often have sharp frosts in May, when your vines are in blossom, and with a little more Anthracite you will avoid all mishaps—and especially if you want Muscats, (and why should not you have them, and the best too, when the largest bunch ever grown in the world, was grown in a cold grapery in the neighborhood of your city,) a little fire heat at the period of setting is invaluable. And again, in August; when the vines over

which you have watched with a parental affection are about to yield to you their delicious fruit, a damp 'spell' may occur, and a few bushels of black jewels will make them safe, peradventure; and lastly the cost of your flue will be many times overpaid by the length of time that you can keep your grapes. With an occasional firing you can have the best until December, by lightening a little fire in damp rainy weather, and in a fine dry day giving plenty of air. A ton, or a ton and a half of coal will carry a moderate sized vinery through a season; occasional firing is only advocated. Some may object to the flue on account of unsightliness, but by making the stoke hole deep enough to ensure a good draught, your flue may be altogether below the surface and directly under your feet if you prefer it. An air-tight stove will answer tolerably well, and may suit some who are adverse to flues—but the difficulty of diffusing the heat through a grapery of any length will not make them desirable, except to those of small size—besides the cost is nearly as great as a flue. Means should be taken to secure moisture, by either building the flue in such a manner that on the top there shall be receptacles for water, or else by substituting earthen shallow evaporating pans. Never allow your flue to be too near your wood work—we knew of a forcing house that came near destruction by omitting this precaution, although not so likely to happen where the vines are not forced; it is well to look after this. An evaporating trough will be found useful in a cold vinery, especially during the first season before much foliage is secured, they can be made cheaply of wood, carefully joined, made water tight, and may be eighteen inches wide by four deep, to run the whole length of the building, only to be filled in bright sunny weather; sometimes the water rises in these to such a temperature as to be uncomfortable to the hand. A supply of warm water for syringing the vines is thus always at hand; if they leak after not being used, fill the seams with pitch.

Bass matting is better than twine to tie up the shoots, and care must be exercised not to tie too tightly—allowance to be made for the future swelling of the joints. We never knew a beginner to thin his grapes too freely—if they are not intended for the market, good thinning will be the means of keeping them late.

A good rule to the amateur is, after he is through, to go over and cut out one-half of those that remain—the bunches will swell up in a manner that will astonish him. An ample supply of water must be looked to—rain water is always most

desirable, and always to be had if tanks of a sufficient size are provided. Manure water is not to be forgotten. Cow manure is well thought of, although when the grapes are maturing, we like something stronger—it should always be clear, not to clog up the small fibrous roots.

THE PREMIUM ROGERS' HYBRID, No. 19.

BY J. S. LIPPINCOTT, HADDONFIELD, N. J.

Having observed that you propose to give us an illustration of Rogers' Hybrid, No. 19, which received a special premium as the best new hardy grape, shown at the late exhibition in Philadelphia, by the Pennsylvania Horticultural Society, permit me to offer you the accompanying outline sketch of one of the bunches then exhibited.

The cuts that have hitherto done duty for the Rogers' Hybrids, do not represent the product of mature vines, as you will perceive by the outline presented, of which, I believe no part is exaggerated.

By actual measurement, the bunches of No. 19, were found respectively 5, 5½ and 6 inches in length, and the longest, was fully five inches across the shoulders.

The berries were ¾ of an inch in diameter, and quite one inch long, of a blue-black color. The largest bunch weighed twelve ounces, or ¾ of a pound.

The fruit was of good quality, not strongly Hamburg-like, but was well described by a lady of pure taste, and familiar with superior grapes, but ignorant of the origin of this variety, "as remarkably fine Isabella." It had not, at the time, attained its full ripeness, when it becomes entirely melting and agreeable to palates not spoiled by the highest flavored grapes. I believe it will prove an excellent substitute for the Isabella, as its fruit is quite equal to any of the latter variety we are favored to mature in the country unsheltered by walls. Ripening but a little later than the Delaware, and many days before the Isabella,—producing withal a most noble bunch and berry, it may well replace the latter uncertain, though long favorite variety.

The vine that produced the premium Rogers', No. 19, was grown by Jacob L. Rowand, Esq., of Haddonfield, N. J., who also grew the very fine Delawares, to which the first premium was awarded. The soil of this garden appears to be good loam, well adapted to grapes. The vines are somewhat protected on the north, east and west, but open to the south, towards which the surface

slopes. No mildew whatever appears in this garden, while everywhere else that my observation extended, far and near around me, mildew prevailed, and in some places was very destructive. My own Rogers' and Concords appeared to be less affected than any other varieties—the leathery texture of the leaves resisting, perhaps, in a great measure, the influences inducing the growth of this pest. The Catawba, however, rots badly in the above garden. The above Rogers' vine is now 4 years old, and has made a fine growth. At the surface of the soil its circumference is fully three inches, and it produced during the past season, one dozen strong shoots, each from 12 to 15 feet long, some of them bearing leaves one foot in diameter, of a leather-like texture, adhering well to the branches, and seemingly incapable of mildew.

In the same garden, Rogers' No. 1 has produced fruit of fine quality, and larger than any of Mr. Rogers', that I have seen illustrated by wood cuts.

The vines about as strong as that of No. 19, with persistent leather-like leaves, one foot in diameter, and has not mildewed.

The berries are nearly an inch in length, of a long oval form, color reddish amber, skin very thin, the flesh quite tender, melting, sweet with a high aromatic flavor.

Having had several bunches upon my table, I partook of them at times with peculiar satisfaction, though I had Delawares and Hamburgs at command. I would not thereby imply that No. 1 would be preferred by many to the above named, but I found it more desirable at the time, and doubt not there are others who would agree with me.

Whether these Hybrids exhibit more or less of the native, they certainly surpass any of the pure native varieties in size, and in flavor I prefer them to all others that I have tasted, the Catawba alone excepted. The Delaware will, however, be more highly esteemed by the majority of connoisseurs.

There are some who think the Northern Muscadine a very fine grape, and to those who judge of a fruit by its saccharine properties alone, it is no doubt agreeable. A just combination of sugar, acid and aroma, we deem more desirable. The Delaware and Hamburgs have the sugar, but not the aroma of the Catawba or of Rogers' Hybrid, No. 1, which to some tastes may be 'foxy,' to others Muscat-like, but by many will be deemed a merit. But *De gustibus non est disputandum*.

[The drawing was like the originals we saw, and as here described.—ED.]

PENNSYLVANIA HORTICULTURAL SOCIETY.

DISCUSSIONAL MEETING, APRIL 5TH, 1864.

W. L. Schaffer, Esq., in the chair.

Mr. Thomas Meehan presented the following essay on

"HERBACEOUS PLANTS."

When Lord Bacon made the often quoted assertion, that "a garden is the purest of all human pleasures," he had no reference to gardening as we have it now. What we call "massing" had no existence in his day. Now a few Verbenas, a score or so of Geraniums, and a small stock of what we call bedding plants, compose the chief element in what we call the flower garden. But in Lord Bacon's time, the purest of human pleasures, consisted of little more than the cultivation of a few annuals and herbaceous plants.

In the progress of gardening taste, herbaceous plants have been overlooked, until with the exception of a few old fashioned botanists, no one cultivates them; and were it not for an occasional Phlox or Peony, many real lovers of gardening would not know what an herbaceous plant was.

Cultivating bedding plants in masses is all pretty enough. The effect of the whole when properly arranged is magnificent. The harmonies of color, and the play of light and shade afford a pleasure nothing else can give; but this is all it will do—while the mixed border of herbaceous plants will furnish an almost inexhaustible fund of other, and no less pleasurable enjoyment, than the best arranged massed beds of flowers in the modern style will do.

In the first place, with your common bedding plants nursed through the winter in frames, or potted in greenhouses through winter, we can have flowers at most but six months in the year; but with herbaceous plants we have flowers nearly the whole year—for nine months at least, abundantly. In the fall the Chrysanthemums and other aster-like plants have scarcely been killed by the November frosts, before the Violet endeavors to open its blossoms. If a few dry leaves get above them so as to make a slight protection, and the situation is somewhat sheltered from cold winds, they will bloom considerably up to the new year. Then hardy plants get quite common. Some of the Hellebores flower in January, and the Winter Aconite, and very often the Snowdrop and Crocus are open before the month goes out. The past winter the double and single Snowdrops were in full bloom the last week in

January. From this time forward until frost again returns, something or other gives a daily interest to the mixed border path.

One would scarcely suppose that the peculiar kinds of plants cultivated would have any influence on the health or social habit of whole communities; yet we are accustomed to say that the female race has degenerated; and the commonest localizer for the newspaper press, finds a never failing subject for an item in the physical degeneracy of young ladies of the present day, as compared with the stalwart frames of their grandmothers. We do not believe in this degeneracy, although it may be true, for there is no incentive to exertion in modern flower gardening. When the social pleasures of winter are over, and a few warm April days are come, a day is spent in selecting stock at the florist's, another day spent in setting out, according to color and art—all the rest of the year may be spent in lazily lolling at the parlor window watching for the daily developement of the charming effect. On the other hand herbaceous plants require daily attention. While some that have been named, staked and dressed, are rewarding us with their blooms, others are but just shooting above ground, and in their turn require support against their own overgrowth, or from coarse rude winds—while some are ripening seed which you wish to cut away or preserve, the opening buds of others are but just bursting forth. Others, again, open their flowers best in the morning—before noon the glories are gone; while still others are but evening primroses, and bloom only for us when the dewy eve shall come. Hence, continual activity is an essential to a well kept herbaceous garden—daily, monthly, nay yearly activity—and the lady who loves this style of gardening, will not have time to get sick; and will in the continual recurrence of interesting novelties, find a continual inducement to while time pleasantly away.

The lovers of the modern gaudy style of flower garden decoration, know not what great pleasures they lose by the neglect of the herbaceous plants. Formerly the ranks of the botanists were recruited from among young flower gardeners. They watched the opening blossoms, admired the beautiful forms, and examined the various structures, of their hardy garden pets. The garden was a school of observation. Nothing escaped notice. They became familiar with stamens and pistils, petals and corollas, and arrangement and classification necessarily followed. The mental element of human nature was thus appealed to, and rose superior usually to the more sensual love of color and show.

Since herbaceous plants have lost popularity, botany has declined in the number of its students. We look for them no longer in gardens; but meet them only once in a while, like rare plants themselves, far away in the wild wood.

Almost all the poetry of gardening is connected with herbaceous plants. Some fancy writer has told us of a young and loving couple once walking by the river side, when by some accident the man fell into the deep and rapid stream. The young woman exhausted every effort to save him, but all in vain. When hope had reached its lowest ebb, and he felt his numbered moments drawing to a close, he clutched a handful of sweet blue flowers, which she could barely reach from the bank side, and throwing them to his loved one, exclaimed "forget me not!" and sank to rise no more. No mere annual bedding plant could have handed this touching story down to us. The young woman might have sown the seeds, or stuck in the cutting for the first year or two; but time which heals all heart sores would have soon made love's labor a trouble; the plant would have first died out, and then the memory of the lost one, and no "Forget me not" would have been handed down to us of this day.

Hyacinthus, the beautiful boy, when murdered by Zephyrus, to the great grief of Apollo, would have been lost to posterity had Apollo, raised up merely an annual from his blood; but the sensible god knew better, and choosing the well known bulbous root, to commemorate the lost companion, showed at once his good sense and love for us in raising up the sweet and lovely plant as we find it.

And so of Narcissus, fool that he was for killing himself, because he thought no young damsel handsome enough to possess so charming a beauty as himself; yet he showed, so far, good sense when he determined to turn himself into a flower, as to choose a perennial herbaceous plant for the purpose. We never look on a Narcissus but we read the lesson plainly that there is wisdom even in fools.

And when we remember the Violets and Primroses, and the Daisies and Cowslips—the Anemones and Buttercups and Dandelions that pleased our childhood so; Lilies of Japan, and Lilies of the Valley; Stars of Bethlehem, and thousands of other glorious things that every school boy knows; what would our literature have been were all these annuals or bedding plants any thing else to us than what they are?

The individuality of herbaceous plants is one of their greatest charms. That Peony, perhaps, is a piece of one that grew in mother's yard; this Ivy-leaved plant came from Kenilworth Castle; and

that, again, is a plant from a Violet that grows over our children's grave. We cannot get the same associations or the same cherished ideas out of the loveliest annuals that grow. Year by year your favorite plant remains. You become attached to it, as to an old friend; and its annual appearance is looked forward to with the more pleasure, with the weight of years attached to it.

I would not have the beautiful bedding flowers less cultivated than they are; but ask that they shall not have all the ground to themselves. I would have a herbaceous border in every flower-garden; and would even have the mixed border first—leaving only what is left for the fancy bedding plants. In laying out the ground for them, whatever system of beds is adopted, the beds themselves should be narrow, so that one can get all around about them for weeding, tying, and close admiration, without treading on the borders themselves. The tallest, of course, should be planted farthest from the point of view, and the dwarfest-growers in front. If possible, two separate parts of the ground should be selected for herbaceous plants. Those which come from more northern countries, or high mountainous regions, delight in a moist atmosphere. We sometimes fail with the latter class of plants through confounding a shady place with a moist atmosphere. But a shady spot is frequently drier than a sunny one. In the ground under trees, for instance, the roots of the trees make the earth very dry, and yet it is not unfrequently the case, that persons select such spots for these northern plants, under the belief that it is the shade and not the moister atmosphere of cool climates which they require. I myself have fallen into this error in times past. In my earlier attempts at cultivating that beautiful herbaceous plant the Auricula, I used to put them under the shade of trees for the summer; but usually lost the greater part of them. For the past few years I keep them in summer under glass frames; and though often exposed under them to the full sun, they do admirably, the glass enclosing the moisture and rendering the atmosphere as humid as the Auricula could wish.

There are also a great many rock plants, which come under the head of herbaceous plants, that can be made very attractive in garden culture. The best way to form a rockery on a small scale is to make it look like one piece of rock. Made of many small pieces of stone a rockery looks childish—frequently the attempt to form one has no more beauty about it than there is in a load of building stone dumped down on a hummock. The way to pro-

ceed is to build the piece of stone and mortar, in the usual way, but so as to make as many hollows as possible to contain earth and the plants, and to have the whole outline as grotesque and still as natural as may be. At the bottom of each of these, hollow holes should be left, so that the soil in these hollows should communicate with the soil under the building work; which soil should be filled in as the work proceeds, and form the great bulk of the material of which the rock mound is formed. After the whole mason work has been built, it should be washed over with a thin solution of cement which will make stone and mortar look all stone alike, and as if of one piece. Rockwork of many separate stones never looks well except on a very large scale. Nature laughs at all feeble attempts to mimic her; and a laugh from any source is sure to raise the laugh all round.

In regard to the cultivation of herbaceous plants, all the single flowering kinds can be raised from seed, which should be sown in the open ground in the fall, when they will flower next year: otherwise they will not bloom till the season following. All the kinds can be raised from offsets from the roots, which in most cases they produce abundantly. The best time for this is in the spring. Some kinds do not produce plants fast enough by offsets. These are raised by cuttings of the flower-stems. Lilies and bulbs generally cannot be increased this way, unless it be the Lilies which will often produce bulbs at the axils of the leaves if soil be mounded up around the flower stems. They also increase by tearing apart the scales on the bulbs, and keeping them rather dry for a short time, when bulbs will form at the base of each scale.

As a rule herbaceous plants are best reset every few years, the soil becomes exhausted, and so many suckers and offsets together rob one another. The spring is the best time for this, except in the case of bulbous roots, which should be replanted after they have matured their growth in the fall.

One great enemy to the cultivation of herbaceous plants, especially the bulbous section, is the inroad of mice and vermin on the roots—in some classes also, as in the Lily and Gladiolus, the leaves are attacked by a disease which so weakens the plants that the flowers are very small in consequence; but as I have already drawn these opening remarks to a greater length than customary at our meetings, I will not enter on these questions now.

ORCHARD HOUSE CULTURE.

BY E. FRYER, NEW LONDON, CONNECTICUT.

Our thanks to "S. F. T." for his useful notes on peaches, in the February number. I was in hopes while reading his article, to find some account of the Early Anne. Should be glad if some one having that variety under cultivation, would give his opinion of the fruit-bearing capacity of tree, &c.

Will some one also give his experience with different varieties for orchard-house culture? Here we find most of the Nectarines to do well, Early Roman and Early Violet particularly so for peach. George 4th, Crawfords Late, Old Mixon, Grosse Mignonne do well in pots. Morris' White does not bear enough to pay for the trouble.

An early productive peach of good flavor and fair size, would be a great desideratum for Orchard-house culture.

I think large pots the most profitable, in which to grow peaches or nectarines, and plants in them are less liable to suffer from want of water, than in small pots. Those about fifteen or sixteen inches diameter will be found the most convenient size, bound with two wires, one near the top and the other near the bottom, they will be less liable to injury. Tubs well bound with iron hoops, are more enduring, though more expensive at first, and the trees grow and bear as well in them as in pots.

For cultivation in the orchard house, it will be found an excellent plan to have two sets of trees, bearing one set, or group, alternate years under glass, and growing them alternate in the open ground, without fruit, subjecting them to pinching, root-pruning, &c., during the season they are out doors.

Thus the trees get a year's rest, and bear a crop only every two years,—the trees which are fruiting this year, will be grown out doors next, and so on in succession.

[There are some excellent suggestions in the remarks of our correspondent. The question of whether it would be best to have a double set of trees every year, would have to be tested by experience. That they would bear better is certain, but as they usually bear well every year, it would be worth trying whether the superiority of the biennial plan was worth the extra care.—ED.]

[The discussion on this essay will be found under the head of Horticultural Notices.—ED.].



The Gardener's Monthly.

PHILADELPHIA, MAY, 1864.

✉ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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THE STRAWBERRY IN 1864.

We expect the forthcoming Strawberry season to be one of the most interesting that has been for many years. Through the efforts of enterprising men at Boston, Cincinnati, Pittsburgh, and other places, Strawberry culture has improved so wonderfully, that we expect to hear of the most surprising crops, should the weather prove favorable, all over the land.

The statements made by some of the gentlemen above referred to as to the amount they raise, have been received very cautiously by the public; but our deliberate opinion is that the highest figure that has been published, has not reached that which the Strawberry can attain. We base this opinion on what we have seen the past year.

Late in July, being in Southern Pennsylvania, though not on a horticultural tour, we had the pleasure of a few hours' chat with some gardening friends, near York, and was told of crops on the high table lands near that place which reached a higher figure than any thing we have yet heard of. As the rebel forces were in the vicinity, no very accurate account could be kept, as some days the gathering would have to be omitted altogether. Hence we do not give the figures, in case it might be said fear of the rebels magnified them. But we went to see the grounds; and from what we saw were satisfied the beds would produce more than any beds we had ever seen. The plantation, as far as we now remember, may have been about one acre, and at a distance might be taken for a field of bush beans, so great was the vigor and luxuriance of the plants. The plants were set in rows across the field, about twelve inches apart,—and in the rows the plants did not appear to be more than six inches from each other. Every fourth or fifth row was missed, so as to make a pathway, by which it was never necessary to go in amongst the plants. The runners were kept cut off by hand, and, as soon as the fruit began to color, a layer of

corn-stalks was laid between the rows. Much importance was given to the corn-stalks. No weeds of any account got through them. The roots of the Strawberries could come near the surface, and yet not be exposed to the light; and no doubt the immense mass of coarse spongy matter forming the stalk must have retained much moisture for a long time, affording an excellent supply for the plants at a time they most required it. But whether it was the peculiar mulch, or whether it was some peculiarity of soil, it was certainly the most likely looking lot of strawberries to produce an astonishing crop we had ever seen.

We were telling our elder Brother Hovey of this remarkable bed last summer, but he frightened us out of repeating it till now. A clerical friend of ours tells a good joke of what happened to him in China. A rare curiosity occurred there one morning in a thin skim of ice. "Did you ever see any thing like that before?" said a Chinaman. "Yes," he replied, "in my country it is often so hard and thick wagons go over the rivers on it, as on a board." The Chinaman looked very angry, and turning to another listener, exclaimed: "Did you ever hear such a liar in your life?" This is what we thought friend Hovey mentally said of us; but remembering, as we write, that the crops were not of Hovey's Seedling, but of Albany's and Triomphe de Gand, we conclude to charitably forgive him, and tell the tale in part again.

Hoping that friend Lee will stay at home this year, and not frighten our Strawberry men, we expect to have more exact accounts of this plan of Strawberry growing than we now can give.

There will also be much anxiety to hear what about the newer kinds? We have lived long enough to see so many 'new and splendid' varieties wield their few 'hours of brief authority' over other kinds, to be utterly forgotten the next day, that we really expect little from any sent out the past few years. The vigor usually accompanying seedlings no doubt honestly deceives the raisers. Still, some one may stand the test of time, and prove an invaluable blessing to the community. The great case for trial will undoubtedly be Russell's Prolific, because it has been long enough before the public to be tolerably distributed; and because it comes before us with high endorsements of men in whom the community rest a high confidence.

But it is no use anticipating our pomological pleasures. Like good children, looking for Kriss Kringle, we may as well take a strawberry nap for a while, and wake at the proper time to 'see what we shall see.'

PEACH GROWING.

It is a remarkable fact, that whatever is a real benefit to a community works its own way with very little effort into public favor. It has not been by line upon line, or precept upon precept, that Sorghum culture has taken its place as an agricultural department of first-class national importance. All the magazine strictures that could be written against Maple-sugar making, would not cause one pound less to be manufactured. In fact, whenever complaint is made that newspaper articles are 'checking projects of national importance,' it may be safe to conclude that the nation will be as well off without them.

There are two articles of culture to which national attention is just now called, that well illustrate this position,—Peach raising, and American 'Chinese Tea' culture. Both claiming to be of immense value in the catalogue of our national resources,—yet the one progressing so noiselessly that no magazine or periodical has yet referred to it; and no one's attention even has been called to the fact, until the sudden announcement that Peach trees could not be had in the market at any price, opened the public's eye,—the other, starting under fraudulent colors, writhes and wriggles under the first breath of public notice. No newspaper has been asked to puff up the peach business; while the mere intimation in the *Gardener's Monthly*, that the 'Chinese Tea,' so called, is but the wild American *Ceanothus*, brings complaints that we 'seek to check an enterprise of immense national importance.'

Leaving the Tea swindle to its inevitable fate, let us examine the looming prospects of the Peach business.

Though a native of Persia, the Peach has found its best home in these United States. In England the best Peaches are raised under glass, or trained with much care on walls with southern or eastern aspects. Even in the south of France and Italy, where they can be grown as standard trees, though they do tolerably well, their success is not in any way to be compared with ours. Though labor is very cheap as compared with American labor, fine open air raised Peaches in England readily bring from four to eight cents each; which, when compared with the relative purchasing power of money in the two countries, is equal to about eight to sixteen cents in our market.

The great success which has attended the attempts to introduce American raised Peaches into Europe, have given an impetus to the Peach business. The demand for them, for many years to

come, will no doubt be unlimited; and America need fear no competition in the trade.

In view of these facts, the Peach question becomes one of first national importance; and its diseases and peculiarities should receive more careful study and attention than it ever has received before.

In Peach culture there is one fact which we think cannot be contradicted: that if the tree remain healthy for the first three or four years, it will live in good condition, and without any complaint that seriously affects the crop, for many years—as long in fact as an apple-tree.

If this be true, and we think it will not be denied, we have a starting point of immense value.

It removes at once all fear of contagion: for there is no reason why disease should not be as contagious to an old tree as to a young one.

There is another fact, fully as important as the above. Peach trees under glass, young or old, seldom have the diseases Peaches in the open air do. Some few instances, we believe, have been adduced to show that Peaches do at times have the yellows under glass. We have never seen it, nor have at least ninety per cent. of under glass fruit-growers; but as we have heard others say they have seen it, not to endanger the force of the argument, it is as well to concede that it does in rare cases exist in glass houses.

But the general rule remains, that Peaches over four years old, to any much greater age, are free from dangerous diseases,—and that it is only when in open air culture that young trees meet fatal obstacles.

If we look for the differences we shall find

1. That old trees do not grow with as great luxuriance as young ones.
2. Trees in pots or tubs under glass, or even in borders under glass, where they are usually severely summer-pruned, do not grow with as great vigor as trees in the open air.
3. Trees under glass are not exposed to extremes of dry air, or low temperature, as are trees in the open air.

The effect of low temperature on succulent, or what is the same thing, unripe wood, is well-known. Most roses grow very late in the fall. Some are to a considerable extent hardy, but the upper portions of their stems get injured. If we watch such stems in the spring, the upper buds, being quite killed, do not of course push,—the next dozen or more push, but are pale,—have the yellows;—the lower push more freely, pretty much as if the plant had been pruned low down. This is the invariable effect of frost on over luxuriance.

In reference to the Peach, its great luxuriance is its fault. It cannot expect to escape the general law of injury from cold or sappy wood. All our efforts should be directed to checking that luxuriance, until age should do it for itself. New Jersey, Delaware, Virginia and North Carolina are famous for their Peaches,—not on of account their climates, but for the pooriness of their soils. We have seen finer peaches in mere quarry refuse in Pennsylvania, than in any state in the Union.

Natural trees, or Peaches from the stone, without being inoculated or budded, are usually esteemed less liable to disease than the named nursery varieties,—not because they are seedlings, for budded trees are little less, but because they are not as vigorous the second year. A nurseryman buds his peach, and the next spring cuts it back to the bud, which of course pushes up with the vigor of a cropped willow; and even the first hard frost will scarcely detach the leaves from it. Should it escape injury till this extra vigor is past, the tree is safe. If not, it is a failure. What conclusion can be more clear?

We would lay down the following rules for the incipient Peach-grower:

1. Choose an exhausted soil in preference to a new or rich one.
2. If possible choose a northern or western aspect in preference to a sunny one, as the action of sun on frozen sappiness is one of the causes of injury to ill-ripened wood.
3. Choose trees for planting that are not over vigorous.
4. Do not crop or cultivate your Peach orchard with any thing which, by forcing you to add manures to the soil to obtain them, will make your trees grow luxuriantly. When their vigor has become exhausted, and the trees by age safe from disease, top-dressings can be resorted to, to maintain fertility.

Scraps and Queries.

☞ Communications for this department must reach the Editor on or before the 10th of the month.

☞ The Editor cannot answer letters for this department privately.

DOUBLE EPIGÆA REPENS—*F. McK., Halifax, N. S.*—I have enclosed a sketch of Nova Scotia's Double Mayflower (*Epigæa repens*). I was the first that discovered this beautiful plant, in May, 1861. I have both the pure white and pink growing in my garden. The plants seem to thrive re-

markably well in the garden, more so than the single varieties, on account of the nature of the soil, which is of a dark peat substance, composed of decayed leaves and roots and grasses, free from any sand or gravel. They are found in bloom from the 24th of April to the 24th of May. They are more upright in their growth and smaller leaves than the single varieties.

[A colored sketch accompanied the above, and shows the plant to be one of the prettiest things imaginable. It is much to be regretted that all attempts to cultivate the *Epigæa* have usually failed. Even in Europe, where the culture of American plants has been reduced to almost the certainty of a science, the *Epigæa* fails.

If the single one could be cultivated, easily this double variety would be welcome to every garden.

The fact has an interest in a scientific point of view, as being, we believe, the only *Ericaceous* plant known to have double flowers, besides *Arbutus* and *Azalea*.]

COLD VINERIES—*J. Ecanston, Ill.*—My employer is about to build a new Cold Grapery. Will you let us know the most approved width of house and length of rafter for a Span-roof; and with a fixed roof, the best way to fix our ventilators?

[We prefer to have long rafters. Twenty-two to twenty-five feet wide is a good size for a span-roof house, which may be built so high in the centre as to make the rafters form an angle of about 30°.

The best way to arrange the ventilators is on the swivel or balance plan. Each ventilator may be opened, shut or secured separately, by a small iron rod with a swivel eye; or the whole set of ventilating-rods may be attached by movable eyes to one rod, running through the house under the ridge pole, and all opened together, by a simple lever arrangement at one end of the house.]

HARDY HERBACEOUS PLANTS.—We hope to be excused for publishing the following extract from a private letter of a New York correspondent; as calling attention to our beautiful herbaceous plants. There are many yet unknown to cultivators. Who, for instance, grows *Silene Virginica*?

"We have nothing new in the herbaceous way, that I am aware of, around here. I received a package of seeds some time ago from Mr. Hogg, who is in Japan, (chiefly *Coniferae*), and among them was a variegated *Iibiscus palustris*, and an *Achillea* with finely pinnated foliage; the flowers like *Millifolium rubrum*. Hardy herbaceous plants come out very slowly, compared with other plants.

This continent I know has been pretty well explored between here and California, but my impression is that there are many good herbaceous plants yet between here and there which have not been described or discovered. You know some plants are very local in their habitats. I wish Mr. Hogg could only penetrate into the interior of Japan, he would find something or other on those mountains which would be worth having, and hardy, also."

MARVEL OF FOUR SEASONS RASPBERRY—*A Subscriber, Cincinnati, O.*—"Is there any difference between Belle de Fontenay and Marvel of Four Seasons, and is either one worth growing, and if so, which? With me the fruit rarely sets and is worthless."

[Some good pomologists consider them distinct, and point out the differences. We believe them to be the same, as practically they certainly are.

Well managed it is an admirable variety. The chief thing is to thin out the canes as they grow, and cut down in the spring to about six inches in length. No garden of small fruits is in our opinion complete without this or Catawissa.]

PLANTING HOT-HOUSE GRAPES—*An Amateur Grape-grower, Pittsburg, Pa.*—"I have been told in planting Grape vines to bury a cane down six feet if the plant be ten feet long, so as to leave only an eye or two exposed; is better than to cut down the vine to two or three eyes; what is the *Monthly's* opinion?"

[Not to *bury* the cane *down*; but to lay it horizontally under the ground, leaving out only an eye or two at the end, is commendable practice, and much better than pruning back the vine.]

NURSERY BUSINESS IN CALIFORNIA—*An Alameda Correspondent* writes:

"Prices this year are reduced nearly or quite one-half. Sales very limited, on account of the drought. We have had no rain since Jan. 30th, and 5 60-100 inches up to that time. Crops all over suffering, cattle dying, and prices for farm produce up very high: hay \$50, wheat 3c per lb., barley \$3½c., oats \$3½c. My nursery does not appear to suffer; but I dare not sow or plant any thing, and now a complete stoppage of sales. We confidently expect rain shortly. In 1851, up to March 11th 3 30-100 inches fell, and 3 71-100 after. In 1853 over 10 inches, and in 1855 over 10 inches, so that we do not despair of getting enough to make our crop with.

STEARIC ACID—*J. H. B., Hartford, Conn.*—"Would you oblige me by informing where I can find Stearic Acid, mentioned in your *Monthly* for 1862, some time about November."

[Stearic acid is but the principle of tallow. Probably a pure Spermaceti candle would be as near the article as our correspondent could get.]

CRAIG MICROSCOPE—*A Subscriber, Rochester, N. Y.*—"Will you please inform me through your *Monthly*, whether the Craig Microscope would answer botanical purposes?"

[The Microscope in question is very good to give a young mind an idea of the wonders of the invisible world, but of no use to botanical students.]

Books, Catalogues, &c.

THE GRAPE CULTURIST: A Treatise on the Cultivation of the Native Grape. By A. S. Fuller.

We have given this work a careful perusal, and consider it one of the most valuable contributions to American Horticultural literature that has appeared for some time. It treats first of growing from seed, both under glass and in the open ground, until their fourth or bearing year. *Secondly*, Propagating by buds or eyes, showing its advantages, and the most successful methods of procedure. *Thirdly*, Propagating from unripe wood, which is given in detail, though not approved of. *Fourthly*, Propagating-houses, with several well designed plans for the purpose. *Fifthly*, How to raise Grape-vines in the open air. *Sixthly*, Of Layering. *Seventhly*, Grafting the Grape,—his most successful plan being to graft just below the ground in October, November, or December. *Eighthly*, Hybridizing and Crossing. Mr. Fuller enters deeply into the definition of the two terms, and argues for a difference. This is one of the few chapters in the book on which intelligent readers will differ. *Ninthly*, Transplanting. *Tenthly*, Soil and Situation. *Eleventh*, Stem appendages, treating of the forms of leaves, etc., as furnishing assistant characters in defining varieties. *Twelfth*, Planting the Vine. *Thirteenth*, Grape Trellises. *Fourteenth*, Time to plant, Prune and Train. *Fifteenth*, Garden Culture,—a useful chapter, so far as it goes, but on which we think much more might be said to advantage,—particularly, instead of raising the soil of borders, so that the soil would ultimately sink to the level of the surrounding soil, we would have it so as to be permanently higher. On the

manuring and cultivating questions, also, Mr. Fuller is commendably moderate,—not so much as he might be, but still on the progressive track. *Sixteenth*, Miscellanies,—principally of thinning fruit, preserving fruit, wine making, etc. *Seventeenth*, Insects and Diseases. *Nineteenth*, Varieties and Descriptions,—in which Mr. Fuller gives his views of the merits of the rival candidates; and though we, of course, as no two men will exactly agree on such a subject, differ in some points from the author, we think he has treated it in a very impartial manner,—much more so, in fact, than from his past business connections the public would be willing to credit. *Nineteenth*, Review of various systems of Training.

We are willing to confess to an agreeable disappointment on laying down the work, as we get to the last page. The book is what it pretends to be and nothing more. It is not one of those double meaning things, which leaves you in doubt how much or what it does mean,—whether, as it professes to be, something entirely for your benefit, as worth for the money asked for it; or whether it is to lead you on to invest largely in the author's manures, or his Grape-vines; or as some other advertising dodge. We mention this fact because we know that a very prevalent feeling of mistrust exists in reference to a small coterie of grape men, with whose habits of bending even principle to profit, the public have become disgusted. *This* work is free from all such blemishes, and we cordially recommend it to all our readers.

PROCEEDINGS OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, for January.

This number contains an interesting chapter, entitled "Notes of Botanical Visits to the lower part of Delaware and the Eastern Shore of Maryland," by W. M. Canby. Some very rare plants were discovered, and one entirely new, which is described in the paper by Dr. Asa Gray as *Carex Canbyi*. The following note, on a very rare shrub of some beauty, will interest nurserymen:

ALNUS MARITIMA, Muhl.! in Herb. et Plant. Amer. Sept., MSS., vol. i. p. 193; Nutt., Sylva, vol. i. p. 34. Frequent in Sussex county, Delaware, and southward in Maryland. Flowering in September! Specimens of this plant, consisting of small branches with leaves only, exist in the herbarium of Muhlenburg. In the Academy's herbarium there are specimens, collected by Dr. Pickering, with leaves and fruit. By last season's collections, the anomaly of a fall-flowering alder is brought to light. So singular a departure from the

habit of the genus may well excite a doubt as to whether it is not a mere sport, or the precocious blooming of an ordinarily spring flowering plant. Yet the observations may seem to preclude this idea. The plant was noticed at several stations over a range of fifty miles, and in the beginning of September was everywhere found in blossom. In going over much the same ground about the middle of the month, the sterile catkins had *all* fallen or withered; and when again observed in the beginning of October, no preparation for spring-flowering could be seen, although on *A. serrulata* the young catkins were already an inch long. Next season's observations will probably decide the question. This shrub, or small tree, attains the height of 16 to 18 feet, growing much like *A. serrulata*, but with a more open habit, and with the bark lighter colored. The leaves are smooth and glossy, on longish petioles, not furrowed above, thick, and strongly veined beneath. Sterile catkins resembling those of *A. incana*, but the scales more glutinous. The glossy foliage and handsome sterile catkins (should they prove to be regularly produced in the fall,) would make this a desirable shrub in lawns, &c.

PROCEEDINGS OF THE MISSOURI STATE HORTICULTURAL SOCIETY FOR 1863—1864.

This is one of the most interesting volumes we have received from any society. We extract the following essay from Dr. Hull, of Alton, Ills., on evergreens entire. As it presents some very curious facts of interest to Horticulturists all over the Union. As compared with this point, some of the things he names as hardy there, are here quite tender; and on the other hand many things that stand well here will not do at all with him. There is something remarkable in these facts worth investigation:

EVERGREENS—THEORY OF GRAFTING.

BY E. S. HULL, ALTON, ILLS.

Mr. President, and gentlemen of the Missouri Horticultural Society:

The beautiful tribe of evergreen trees and shrubs deserves more attention than they generally receive in the west. As I have had the plants named in this paper in cultivation, it may, perhaps, not be amiss to give my views and experience as to the adaptability of some of them to our soil and climate.

Picea Cephalonica.—Trees badly browned the first season; all die during the second winter.

Picea Webbiana.—When vigorous and well protected, it is a beautiful tree; the winter sunshine is destructive to it.

Picea pindrow; *P. nobilis*; *P. Hudsonica*; *P. Nordmanniana*, and *pichta*, have been classed, by sanguine amateurs, as hardy; not one of them will stand the winter sun-light unprotected, nor will out door protection carry them to the end of the third winter.

Picea pectinata (The European Silver Fir.)—Is a tree of the highest excellence; it deserves a place in the smallest collection of evergreen trees. When once established, its growth is sufficiently rapid. This tree is less formal in its habit than the American varie y; the leaves are broad, and of a silvery green color, and retain their freshness unimpaired during the winter. It is yet, unfortunately, expensive and difficult to transplant, but must, ultimately, take the first rank among evergreens suited to this climate.

P. balsamea (American Balsam Fir.)—Specimen trees, planted near Alton, in 1845, now twenty-five feet high, are objects of great beauty. It holds its foliage, without change of color, throughout the year.

Abies excelsa (Norway Spruce.)—This tree is easily transplanted. It is beautiful, when young, and improves with age; when old it is truly venerable. It is valuable for screens and hedges, for the lawn or groups, it is unrivalled, and is fast becoming popular planted alone, or in belts on our prairies.

Abies pigmaea.—This dwarf will advance about one foot in ten years; the foliage browns when exposed to the sun; it may prove hardy in shady situations.

Abies minima.—Tender; it mildews, and is injured by winter sunshine.

Abies gigantea; *A. excelsa*; *A. Menziesii*; *A. Claubrasiliana*; all die early in December.

Abies Douglasii.—This tree is half hardy; it usually survives two or three winters, gradually parting with its foliage.

Abies pinsapo, or *Picea pinsapo* of some. A beautiful tree; at a little distance, it somewhat resembles the silver firs; its leaves are recurved; it has stood two winters well unprotected.

Abies Canadensis.—Among evergreen trees, perhaps, there are none more beautiful than the hemlock. It is perfectly hardy, and, standing alone, forms a broad low head, with somewhat irregular branches, clothed with a fine green foliage, of great beauty. This tree is entirely free from that stiffness which attaches to some other trees of the same family, and cannot fail to attract the attention of the most indifferent observer, especially when the dark green mass of foliage is moved by the breeze.

Abies alba (White Spruce;) *A. nigra* (Black Spruce;) and *A. rubra* (Red Spruce;) well known American trees; hardy, and desirable in large collections.

Abies Morinda.—In England, in a collection of about one hundred choice sorts of evergreen trees, this beautiful, weeping Himalayan Spruce was, perhaps, the most attractive sort among them. Here, unfortunately, it will only succeed when shaded during the winter; unprotected, it will endure two or three winters, by which time it will be deprived of all its leaves.

Pinus sylvestris (The Scotch Pine.)—This tree is perfectly hardy, and deserves to rank first for its real merits. It is specially suited to our climate; its foliage, though stiff, retains its color fresh throughout the year.

Pinus ponderosa.—This new tree, from the high lands of Oregon, bids fair to become a great acquisition. The persistency of its leaves throughout the year, without change of color, the rapidity of its growth—thus far, exceeding that of any other sort—its long leaves, its wide spreading branches, all combine to make it a popular rival of other sorts.

Pinus Cembra; a remarkable slow growing and hardy sort.

Pinus Gerardiana; *P. Lambertiana*; *P. insignis*; *P. laricio*; *P. Llaveana*; *P. Pyrenaica* and *auracarie imbricata*, are all tender.

Pinus excelsa.—This tree has often been named as superior to, and a rival of, the White or Weymouth Pine, which it closely resembles. It mildews, and gradually parts with its leaves, and, somehow or another, it is dead before we are aware of it.

Pinus Hartwegii.—This beautiful tree stood well one winter, partly shaded, when it was accidentally destroyed.

Pinus Jeffreyana (Jeffrey's Pine.)—Is nearly hardy; it has stood eight years unprotected. Older trees may prove quite hardy. It makes a broad spreading head, leaves five to seven inches long of a light green color, which brown a little in severe winters.

Pinus Austriaca (Austrian Pine.)—This tree, considering the ease in transplanting; the rapidity of its growth, its grand appearance in age, its suitability to our soil and climate, renders it valuable for the lawn, and for planting in belts.

P. Strobus (White or Weymouth Pine.)—In every respect a desirable tree for this latitude. Too well known to require description.

Cedrus Deodara.—Too tender for farther trial. A lack of moisture in the atmosphere during the win-

ter months, alone will kill it. Barrels turned over them have, in some instances, failed to secure the requisite degree of humidity needed for their safety.

Cedrus argentea is not a tree at all adapted to our climate.

Cedrus Libani (The Cedar of Lebanon.)—Repeated trials have demonstrated the unfitness of this tree for the west; when planted out, protection will not save it.

Cedrus Atlantica.—This tree has often been named as a substitute for *Libani*. Unprotected, its leaves brown badly, and all drop off except when protected by snow.

Cedrus Africanus.—Tender.

Juniperus excelsa; *J. Tamaricifolia*; *J. Bedfordiana*; *J. ericoides*; *J. oblonga*; *J. repens*, and *J. Chinensis*, are all tender, or their leaves burn badly.

J. hibernica, half-hardy; *J. squamata*, hardy; *J. recurva*, a low spreading tree, of slow growth; it retains its leaves uninjured. *J. pendula*, a weeping tree, quite hardy, of very slow growth. *J. Sabina variegata*, may prove hardy. *J. succica* (the Swedish Juniper,) well known; nearly or quite hardy.

[To be continued.]

CHRONICLES OF A GARDEN. By Miss Henrietta Wilson.

We promised last month to notice this work again. We cannot do better than give the following extract from the book itself, by which our readers will be able to form a good opinion of its character:

“LOVE FOR TREES.

It may appear absurd to the owners of woods and forests that the trees of a villa garden should be thought worthy of remark; and perhaps some persons may consider the leafy monarchs out of place in such a situation, and feel no regret at seeing them laid low to make way for beds and borders. It is indeed grievous to see the want of taste and feeling shown on this subject by almost all classes concerned in the building of suburban residences. To judge by the unsparing use of axe resorted to when a wooded park is ‘feued’ for villas, be they mansions or cottages, one would think that a fine tree or group of trees was a nuisance, to be got rid of as quickly as possible; and that no allotment of ground, whether of six acres or only consisting of one, could be ready for either building on or laying out as a garden or shrubbery, till every tree had been uprooted, and the ground left bare as the blasted heath. Then the roads and

pathways where once we walked under shady sycamores or spreading beeches, alas for their leafy honors now! Poor comfort it is for those who once admired—ay, and loved those noble trees, to be told that now the footpaths will be drier and the roads in better order, for the litter of fallen leaves is at an end, and the sun and wind will now dry up all mud and moisture. How sadly do we now recall the rural beauty of one of those by-roads, with its avenue of trees on each side, and bounded on the west only by an old crumbling wall, over which one could see into the sweet green fields, gay with buttercups and daisies, while every here and there, where the road widened, there were irregular grassy knolls covered with whins, where one might sit and rest, even though it was ‘within a mile of Edinburgh town.’ First came the repairing of that old mossy wall, so that one could no longer see into the grass, or look on the trunks of the tall trees; but still their branches waved overhead, and still the green resting-places remained. But ere long the ground was fenced, the old trees were cut down, a staring stone and lime wall was built, and road and footpath were alike macadamized, or paved with little hard stones; the grass pared off, the golden whins dug up, and the once rural country road was turned into as dull and uninteresting a highway as ever road contractor rejoiced in. There may be situations where even a fine tree is in the wrong place, and must be removed—if too close to the dwelling, or where it closes up a fine view, or where too crowded upon other trees; but in general the enjoyment as well as the beauty of a small place is greatly enhanced by large trees.

There is no season when trees are not a source of pleasure, varied and unwearied. You may have but one of each kind, and you may think you know that one well; but watch it, study it, and every season of the year, every change in the weather, will bring out new beauties.

No plot so narrow, be but Nature there,
No waste so vacant, but may well employ
Each faculty of sense, and keep the heart
Awake to love and beauty.

If, as Arthur Helps truly says, ‘the moral experiments of the world may be tried with the smallest quantities,’ so may the pleasures of the woodlands. One tree may afford diversified enjoyment, not only by its form, its shade, its foliage, but by the effect its leaves give to light, whether it be the ‘cool green light’ that is so exquisitely refreshing, or the brilliant glow of carmine or orange, seen glinting through the flickering foliage at noon or dewy eve.

I know few saunters more enjoyable than one along by a hedgerow in spring; and when, as you pause and linger in delight over the rich clusters of the hawthorn blossom, a breeze passes, and the ground is whitened with the frail flowers, do not the words of our Saviour come home to the heart—"If God so clothe the grass of the field, which to-day is, and to-morrow is cast into the oven, shall He not much more clothe you, O ye of little faith?"

In summer every one values a tree for its shade, as well as for its beauty; but the latter quality comes more into notice in autumn, when even in this country, there is a coloring bright enough to give us some idea of the much boasted-of American 'fall.' Even in that universally disliked weather, a thick November fog, I have seen the leafless trees assume a certain grandeur, like giant skeletons looming through the mist, and breaking up the dull uniformity spread over the landscape. Not unfrequently, also, does a sudden frost come on during the night, and lo! the morning light shows all the trees sparkling as with diamonds, the heavy dripping moisture changed to brilliant jewels—meet emblem of the depressing trials of the Christian, meekly and nobly borne, oftentimes changed to blessings, and 'the garments of praise' given for the 'spirit of heaviness.'

Well may Ruskin say that no one can be far wrong, in way of life or right temper of mind, if he loves the trees enough; adding, 'if human life be cast among trees at all, the love borne to them is a sure test of its purity.'

It has been said that every man's trees should be cut down by his neighbor. I know I should be sorry to see the best Samaritan that ever lived with axe in hand among our trees. But when a tree is doomed to fall, it is wise to make its removal now the source of pleasure, instead of indulging vain regrets; and it must be admitted that very frequently its absence does give great additional enjoyment, for, besides opening out a view of distant mountain or extended champaign, there is a peculiar feeling of delight in the expanse of sky now seen. Then the pleasure derivable from one tree is by no means ended when it is cut down; to have it cut up and used as firewood is another interest connected with it, where the gnarled root may be put into some shady corner, primroses and ferns planted in its hollow crevices and around it, so that it becomes a new 'thing of beauty,' and an additional source of enjoyment.

New or Rare Plants.

PYRETHRUM MONS. BARRAL.—The introduction of the *Pyrethrum* marks a new era in flower-garden decoration. Though an old plant, it has only recently been improved; but the progress of the improvement has been very rapid. The *Asters* do not succeed well in our climate. This plant is quite as beautiful, and like the *Feverfew*, will no doubt suit our climate well.

The following is from a sketch sent us by our correspondent, M. Vilmorin, and will give some idea of the appearance of the flowers. *Mons. V.* calls this variety *Mons. Barral*. It is of deep carmine rose color.



There are now all sorts of shades, from pure white to lively red, some single, others seem double, and double,—with as many modifications of form as the China Aster.

We hope to see them in several American collections the coming season.

L'Illustration Horticole for December contains a faithful colored representation, with description, of the following rare plant:

DIERVILLA (WEIGELIA) MULTIFLORA.—It is a matter of some doubt whether or not botanists are justified in separating the three genera *Diervilla*, *Weigelia*, and *Calysphyrum*. The characteristic differences given as reasons for their separation are really so very trifling, that the question arises whether it is not advisable to re-unite them all under the one head *Diervilla*, as it is a matter of some embarrassment to decide to which of the three genera named some plants really belong. However, there is no difficulty in deciding with respect to the plant at the head of this paragraph, as it is in every sense of the word a *Diervilla*. It was discovered in Japan by M. Von Siebold during his last visit to that country, and sent by him to Europe. M. Verschaffelt has procured the whole stock, and is now prepared to send them out. It is a highly ornamental hardy shrub, which, during the flowering season is covered profusely with bunches of five or six bright crimson flowers, and is undoubtedly a very great acquisition to our gardens. Its cultivation is easy, as it will grow in any light, rich, friable soil, and it may be readily propagated by cuttings and suckers.

MIMULUS TIGRIDIOIDES.—A new, very beautiful and distinct strain, obtained by hybridizing the *Mimulus cupreus* with the best named varieties of *Mimulus*. The dwarf habit and freedom of growth of these desirable novelties render them great acquisitions for flower-garden bedding; and for Greenhouse and conservatory decoration they are invaluable, equaling the finest herbaceous *Calceolarias* in the variety of their brilliant colors.

PINUS PERCE.—We have received from Messrs. Hague & Schmidt, of Erfurt, fine specimens of this rare Fir, which is nearly related to *Strobus*, and by no means to *Cembra*. It is the *Penke* of the Greeks, and grows wild in Macedonia on the sides of Mount Peristeri, on granite soil, to an elevation of near 2000 yards, at which height, however, it becomes a scrubby gnarled tree. Gordon's account of it is a miserable mess of blunders.

DICTYOPTERIS VARIANS.—This bold-habited and very distinct fern was introduced some two or three years since to the Edinburgh Botanic Garden from Calabar. It is remarkable amongst the polypodioid net-veined species for its very copious and very irregularly disposed and variously formed sori. Its fronds produce from six to twelve bold-looking oblong pinnæ, which are of thickish texture and somewhat irregular at the edge, terminating abruptly in a narrow tail-like point fully an inch long. The caudex is thick, and covered with lanceolate acuminate appressed brown scales. The fronds are of a dull deep green color, and grow from a foot and a half to two feet high, and from fourteen to twenty inches broad. The plant is well adapted for pot culture, on account of the freely branching character of its creeping caudices. At the under surface of the anterior base of the pinnæ tubercular processes are formed, which ultimately assume the rhizomatic character, giving off fronds and rootlets. For some of these observations on the habit of the plant I am indebted to Mr. Scott, of the Edinburgh Botanic Garden.—T. M., in *Chronicle*.

HELICHRYSUM MANNII (Mr. Mann's *Heliechrysum*).—*Nat. ord.*, Compositæ. *Linn.*, Syngenesia superflua. Who does not even in his nursery days remember the "Yellow Everlasting" on the mantelshelf? and Sir W. Hooker says that "the present noble species, if it can be retained in our gardens and increased, may revive the taste for the genus." It is a native of Fernando Po, and the Cameroon Mountains, at heights from 4000 to 13,000 feet above the sea's level.—(*Bot. Mag.* t. 5431.)

ASPLENIUM FERULACEUM.—A very distinct and most beautiful tropical fern, with something the aspect of *B. scandens*, but more compound, and differing entirely in its short, erect, not creeping caudex. The fronds stand up around this short upright stem, and have stout stalks or stripes, a foot in length, and a very much divided lamina, four or five times pinnate, a foot and a half long, and about a foot in breadth at the base. The whole frond is smooth, and of a clear green color. The secondary pinnæ are somewhat deflexed from the plane of the frond; and the ultimate segments are all narrow linear, with blunt rounded ends, the uppermost on the ultimate pinnules simple, the lower two or three cleft. The species belong to the *Darea* group, and is a most charming addition to the other hand-

some species of this section already in cultivation. It is found in New Grenada, where it was gathered by Hartweg (No. 1519;) and in Quito, where it was found by Jameson. The cultivated plants, which we have seen in the nursery of Mr. Bull, of Chelsea, are stated to have been obtained from Cortago, in Central America. Its finely cut Ferula-like fronds will, we have no doubt, render it quite a favorite among cultivators.

Foreign Intelligence.

AN ORANGE TREE BORER has appeared in the Orange districts of Spain, which a correspondent of the *Gardener's Chronicle* says, has caused the losses of the growers to be enormous. Many of the trees cannot be got to live over three or four years on account of the borer.

CHARACTER OF A GOOD ROSE.—The London *Gardener's Chronicle* says the flat, hard petaled varieties are growing out of favor. Those that have cupped petals are now fashionable. Of this class it names as the most popular English varieties. *Senateur vaise*, *Comtesse de Chabillant*, *General Jacqueminot*, *Gloire de Santenay*, *Madame Furtado*, *Beauty of Waltham*, *Madame Vidot*, and *Madame Rivers*.

VARIATION IN FRUITS.—Noticing the Canadian exhibition of fruits in London, the *Gardener's Chronicle* remarks: "The Belle Lucrative should be the same as the *Fondante d'Automne*, but from the drawing it is doubtful. The *Doyenné d'Hiver* should be the same as *Easter Beurré*, but the figure is that of something quite different." No doubt from what we know of the difficulty of identifying fruit grown in our wide spread localities, our Canadian friends had their fruit correctly figured; and the extract shows how careful we all should be in pronouncing decisively on the 'errors' of others without a large experience.

DIVISION OF VINE-BORDERS.—The utility of this may be questioned, and the idea may seem novel, and, perhaps, interesting to some; but improvement comes looming in the distance, and in the process of time they become immediate realities. The plan I advance is, that the roots of every individual vine be separated from those of its fellows by a four-inch brick wall running transversely through the border, both outside and in.

By the above means more command is gained

over every plant. First, in withholding or giving moisture according to the individual necessities and constitutions of the plants, for, in general, vineries are planted with different varieties: hence, the application. Second, it facilitates the lifting or transplanting of any individual vine, and completely obviates the necessity of crippling the roots of that particular vine, or those of its fellows. Third, in renewing the soil, a compost may be given suitable to the appetite of any variety of vine. Again, when a limited number of vines are grown, and a continuous supply demanded, when the vines wear out from constant hard forcing, the replanting of the house would be easily effected by taking out every alternate vine, or every third vine, so that in three years the house might be renewed, both in plants and soil, and never miss a crop. These brick walls would also assist in airing and keeping the border sweet.—P. M., *Combe Abbey*.

[We think all your reasons good ones, except the airing of the border. We do not see that solid brick walls would help that much.

Many years ago Mr. Mearns planted his vines in separate pits or boxes, so to speak; and at one of our best places, we recollect some fifteen years ago seeing early vines so planted in separate boxes, and a flue below them, which answered well, and permitted of changing and renewing as you suggest. In fact, no doubt the plan would be more general but for the expense; gardeners find enough of trouble to get a border done, let alone dividing it with walls.—*Cot. Gar.*]

[American enterprise was not frightened by the expense, but under the leadership of friend Bright, tried the plan extensively and utterly failed.—ED. G. M.]

CULTURE OF PERENNIAL PHLOXES.—There are few herbaceous plants superior to the many beautiful varieties of *Phlox decussata*, combining as they do fragrance, beauty, and size of flower, with rich variety of color. They are well known also as being late autumn-flowering plants, gifted with a hardihood that enables the most delicate of the newer varieties, with very slight assistance, to withstand the assaults of frost with impunity. They are almost without an exception, readily propagated by the young growths of spring, which growths are already discernible above ground. These should be taken off when with two or three joints, and struck like *Calceolarias*. Plants are also readily multiplied by division of the old stool of a year or more old, though I have a preference for properly-treated cuttings, which make very hand-

some plants the second season. Phloxes delight in a light loamy soil, especially if with a slight sprinkling of good decomposed leaf mould intermixed. I would observe, more especially, one marked feature in their successful treatment, attention to which increases materially not only their large heads of flower, but also the well-being of the plants generally. They should at all times be in a place shaded from the midsummer sun between the hours of 10 and 3, as from the very delicate texture of the florets these become very readily scorched.

In such a partially-shaded border I would plant out a few of the more showy and better varieties, having the shortest, some of which barely reach 12 inches high, in front. What a beautiful little plant as an edging, or for the front row, would be the *Phlox frondosa*. Before planting it, it would be advisable to form (slightly covered with the soil, and slightly mound-shaped,) a ridge with moderate sized stones, say four or five thick, upon which to plant them firmly. This little *frondosa* I seldom meet with grown successfully; its neat little branches are 3 or 4 inches high, and covered, Heath-like, with pointed leaves; and it bears, for its size, a large and lively flower, in color somewhat of a dark rose.—*Cot. Gardener.*

AZALEAS DONE BLOOMING.—About a fortnight after blooming they should be repotted, giving but a very small shift—that is, just sufficient to let some fresh compost be put between the ball and the pot. The ball should not be disturbed, only the drainage being removed. Perfect drainage must be provided for in the new pot. Employ a compost formed of sandy brown peat three-fourths, and turfy yellow loam one-fourth, with a free admixture of silver sand. In potting the crown of the plant should be kept rather high. After potting, place in a moist and rather shaded pit or house with a minimum temperature of 60°, and a rise by day of from 15 to 25°. They should be well syringed morning and evening until the growth is made, when the plants should have abundant light and air, with less moisture, until the buds are set, when they should be removed to a light, well-ventilated, cold house. In this situation they will need watering when necessary, and a little fire now and then to dry up damp and excluded frost. If you have a vinery just now starting that will be an admirable place for the Azaleas; for when the grapes are ripening the Azaleas will have set their buds, and that is the time to remove them to a cool, light, well-ventilated greenhouse, where they should be wintered.—*Cot. Gar.*

THE GRAPE 'Archfield Muscat,' is receiving favor among English Grape growers as one of the earliest and best.

TRITELEIA UNIFLORA.—This is an elegant little blue flowering bulb from Buenos Ayres. It is almost, if not quite hardy, but does well under greenhouse treatment. Keep it well supplied with water whilst flowering, and when the weather becomes warm, in the latter part of May, turn it out, plunging the pot in a dry sunny border. Take the pot up in September, and repot the plant, disturbing the ball as little as possible, taking care to secure good drainage. It does well wintered in a greenhouse near the glass. It usually flowers in June, and we should therefore fancy your plant has been rather warmer than is requisite; it will flower next year if not made weak by too much heat. We should like to know if any others of the *Triteleias* are in cultivation at present, especially the North American species.—*Lon. Cot. Gar.*

VARNISHING CALICO.—To render this a substitute for glass, use linseed oil one quart, acetate of lead one ounce, white resin three ounces. Grind the lead with a little of the oil on a stone slab; add the remainder of the oil and the resin, and incorporate thoroughly in a large iron pot over a slow fire. Apply whilst hot to the calico stretched loosely, by means of tacks upon the frame. When cold it is fit for use, and may be tacked on the frame tightly, putting a piece of tape between the tacks' heads and the calico. The composition should be applied with a brush.

LIFTING THE ROOTS OF VINES, AND RENEWING THE BORDER.—*Continued from page 79.*—The bottom or site for the border should be gradually sloped off from the front of the vinery to the extreme front of the border, where the main drain is to be laid, and if practicable give it a fall of 1 foot in 12. When it is necessary from the bad subsoil to concrete the bottom, in a case of this sort I have, for the sake of getting on quickly with the work, formed a firm surface for the drainage to rest on, by first putting a layer of stone of the size of the road metal over the surface, and beating it into the clay, and then placing the whole up with concrete. This at once gives a bottom on which tiles and brickbats can be laid without tearing up the fresh-laid concrete. The tiles and drainage being all adjusted as already described, put a layer of thin turf over the whole, with the grass downwards, if such can be had; if not, a thin layer of straw, or the

roughest part of the soil. While the drainage is being completed, I would advise that upright pipes be fixed close to the front wall of the vinery, and connected with the tile drains in the bottom, and a similar series of funnels along the front in connection with the main drain. This will in hot weather give the power of admitting a circulation of air beneath the border, and the pipes can be plugged up at night. In cases where the border extends inside the vinery, the one set of air-holes should, of course, be inside the house, when the circulation of air will be more effectual from the difference of temperature.

The new soil should be laid on in layers, and rather firmly beaten down with a closely-pronged fork to prevent its subsiding much and dragging down the roots of the vines. When filled up to within 10 inches or a foot of the desired level, the roots of the vines should be disentangled and carefully and regularly spread out over it. Immediately over them place a thin layer of the finest of the soil, and then fill up with it, just as it comes, to the level, which should always be a little higher than is ultimately desired, to allow for subsiding, but never cover the roots deeper than 10 or 12 inches.

The depth of border should be at front of vinery 2 feet 9 inches, sloping off 2 feet at the extremity of the border.

Vines that are thus lifted and replanted by the middle of September, when they are still in leaf, and the temperature of the soil still high, should have the new border snugly covered up with a foot deep of some nonconducting material, such as fern, straw, or leaves, with a covering over all of wooden shutters or straw, to completely protect it from rain. This will prevent the radiation of heat, and protect the young rootlets made in autumn from wet in winter. Immediately, or even before the vines are lifted, a shading of some thin material, such as tiffany, should be fixed on the roof of the vinery, to keep the leaves from being exposed to the full sun. The house should be kept close and moist, to prevent as much as possible the leaves from flagging. Generally, some of the oldest leaves drop off, but with attentive management in the matter of keeping the atmosphere moist and rather close, root-action soon commences, and the laterals will make fresh growth, which should be encouraged for a few weeks. After the vines have recovered the shock the shading should be removed, the atmospheric moisture reduced, and more air admitted. Should the weather be cold, as it often is about the end of September and beginning of October, fire heat

should be applied, particularly during cold nights.

Vines requiring such radical treatment as this are generally not well ripened; and if a crop is expected next season, and for the improvement of the constitution of the vines, fire heat should be applied with a regular but not violent circulation of air throughout October, to ripen the wood, which object for the present is next in importance to getting the vines to make fresh roots in their new bed of earth.

In spring, and just as the vines begin to swell their buds without fire heat, a bed of warm leaves, or leaves and stable dung mixed together, should be placed over the surface of the border in plan of winter covering put on in autumn. This will throw a little heat into the border and assist the progress of the vines very much. The vines should not be hurried in their progress, and only a light crop of fruit should be taken, even should they show plenty of fruit, which must not be too sanguinely looked for.

When the operation of lifting is performed in spring, when the vines are about to start, the bed of hot fermenting material should be applied immediately the work is done. The vines should be slung down further from the glass than the ordinary cases; and instead of forcing them on allow them, so to speak, to feel their way. They must be expected to break more weakly than usual; and in order to assist the young growths to support themselves till the roots are brought fairly into play, a moist atmosphere must be kept up, particularly during bright weather, and they will soon establish themselves, and bear a moderate crop of fruit. The bed of leaves should not be removed from the border till midsummer, and then a slight mulching of dung should be substituted. Where leaves cannot be procured, as is the case with many amateurs, a load or two of stable-manure will answer the purpose; and wherever that is not attainable the next best thing to do is to cover the border with something that will prevent chilling winds and rains from influencing it.

In all other matters in the routine of culture, our correspondents must consult works on the subject, and it is to be hoped that what has been said will be of service to them, and others similarly situated, who have not had experience in lifting the roots of vines.—D. THOMSON in *Cottage Gar.*

MUTISIA DECURRENS has recently bloomed in England. Dr. Lindley says "when the hardness of the plant, its free blooming character, and the large size and brilliant orange of its flower heads are taken into account, this may be estimated as

one of the finest of hardy climbers recently introduced."

HABIT OF CONIFERÆ.—In Europe it is understood that coniferæ very rarely make new leaders after losing the originals. In America all but *Pinus* make new leaders readily—*Abies* and *Picea* particularly so.

PRESERVING ORANGES AND LEMONS.—In Egypt these ripen about January. They are preserved till June by being packed in half dried sand in layers of about six deep, and with two inches of sand between each layers.

THE POMEGRANATE MOTH.—Misery loves company, and it is in some sense a consolation to know that other countries have their insect troubles as well as we. The Pomegranate is the commonest fruit in every Egyptian Garden; but just as the fruit is well set a moth lays its eggs in the fruit, which is thus rendered worthless. But the Egyptians do not vote Pomegranate growing 'a humbug' on that account, but enclose the bushes in finely wove palm leaf baskets, when danger is apprehended, and thus get as many fruit as they want.

THYSACANTHUS RUTILANS FOR DINNER-TABLE DECORATIONS.—I have been much interested in the various articles on this head, which have recently appeared in your Journal; and I write to express my surprise that Mr. Robson has omitted in his list *Thysacanthus rutilans*.

It is, when well grown, perhaps one of the most suitable as well as most splendid plants for this purpose. Its long, tropical-looking, jointed stem carries the crown above the line of visions; while its delicate pendent racemes of brilliant scarlet flowers, show brilliantly by candlelight, without intercepting the view. I speak from particular experience at my own table.—A. D. A. in London *Cottage Gardener*.

IRON GREEN HOUSES.—On the relative merits of wood and iron houses for horticultural purposes, much information would be elicited if the subject were freely discussed, each writer giving his opinion on the matter.

My own views of the case are certainly in favor of wood, but I am by no means opposed in any prejudiced way of iron. I certainly think that wooden houses have approached much nearer to perfection than those made of iron; but that the latter may make great advances I have no doubt,

for it is only by degrees that such progress is really made, and we are told that this is the age of iron, and if we look at the many great objects attained by the use of that metal, the justness of the observation is beyond a question. Perhaps the advocates of iron for hothouses received a great repulse by the universal condemnation that has passed on the large domes at the International Exhibition in 1862; but on the other hand, they have the Crystal Palace, as an example of structure, in which iron may be used to advantage to a certain extent, but in that case very little is used as glazing-bars. Some railway stations also afford examples of the same kind, but on the whole the art of building metallic houses for horticultural purposes is yet far from being perfect.—*London Cottage Gardener*.

SCENERY NEAR YEDO.—Never in my wanderings in any other country did I meet with such charming lanes as we passed through on this occasion. Sometimes they reminded me of what I had met with in some of the country districts of England; but I was compelled, notwithstanding early prejudices, to admit that nothing in England even could be compared to them. Large avenues and groves of Pines, particularly of *Cryptomeria*, were frequently met with, fringing the roads, and affording most delicious shade from the rays of the sun. Now and then magnificent hedges were observed, composed sometimes of evergreen Oak, sometimes of *Cryptomeria japonica* and other Evergreens. These were kept carefully clipped, and in some instances they were trained to a great height, reminding one of those high hedges of Holly or Yew which may sometimes be met with in the parks or gardens of our English nobility. Everywhere the cottages and farm-houses had a neat and clean appearance, such as I had never observed in any other part of the East. Frequently we came upon tea-houses for the refreshment of travellers; and these had little gardens and fish-ponds in their rear, of which glimpses were obtained as we rode slowly by. The scenes was always changing and always beautiful—hill and valley, broad roads and shaded lanes, houses and gardens, with a people industrious, but unoppressed with toil, and apparently happy and contented. Such is the appearance of the sylvan scenery in the vicinity of Yedo. I could scarcely fancy myself on the borders of one of the largest and most populous cities in the East, with a population of two millions of human beings, and covering nearly 100 square miles of land.—*Fortune's "Yedo and Peking."*

CULTURE OF CYCLAMENS.—We select from the lovely Erythroniums, Primulas, Doronicums, and the rest of the spring flowers, one which might claim pre-eminence for beauty if it did not happen also to be one of the most modest; and endeavor to carry the thoughts of our readers forward by proposing the more extensive cultivation of the Cyclamen as a task admirably adapted to the range of practice and means of the majority of amateur cultivators, and as one of the best of all plants known for the entertainment of lady gardeners. If the enthusiasm for bedding plants would only leave its victims an hour of leisure, and a spare corner of the brain for a thought about spring flowers, we should see as many Cyclamens as Geraniums in all private gardens, the hardy kinds showing their bloom in the borders in the first flush of the spring, and the tender kinds filling stages and shelves in the greenhouse, and giving a *coup de grace* to the dinner table and drawing room window; for a few flowering Cyclamens beside one during a deluge in February or a howling March wind enable us to antedate the summer when it is yet very far off, and experience some of the warmth and fragrantcy already in our plants. What a matchless grace is there in the Cyclamen! its deep green shining leaves like a cluster of fairy shields, its delicately tinted and deliciously odorous flowers elegantly poised on their slender stems, like banners and beacons for Puck and his playmates, the wonder is that it has not some such place in story and song as the Violet, the Rose, and the Primula; and indeed it would have had a first place, had nature but have sprinkled its blossoms on our plains as she has sprinkled them among the slopes of the Alps and Pyrenees, and among the woods and wastes of Georgia and Cyprus. Indeed we can almost claim Cyclamen *hederæfolium*, the Ivy-leaved Sowbread, as a native, for it is said to be found growing wild in some Welsh localities, and in Deakin's "Florigraphia" habitats are assigned it at Bramfield, Suffolk; Sandhurst Green, and Goudhurst, Kent.

Dr. Deakin says of this species, "It is frequent in the woods and shady places in various parts of Italy; and so profuse in some districts about Pisa, as to give the surface of the ground an apparent clothing, at a distance, of a delicate pink tissue."

SPECIES OF CYCLAMENS.

The Cyclamen takes its name from *kuklos*, "a circle," probably from the circles formed by the spiral peduncles. In the natural system, it is classed with the Primulacæ, and is only distinguished

from the true Primulas by its peculiar outlines, and the coiling of the peduncle, its formation being precisely the same, the stamens being attached to the lobes of the corolla, instead of being alternate to them, as in most other plants, and the capsule being only one-celled.

The species may be classed as hardy and tender. The hardy kinds are *C. coum*, *C. Europæum*, *C. hederæfolium*, *C. ibericum*, *C. latifolium*, *C. linearifolium*, *C. littorale*, *C. Neapolitanum*, and *C. Vernal*. The tender species are *C. Persicum* and *C. repandum*.

CULTURE OF HARDY CYCLAMENS.

It would be a folly to deal with hardy Cyclamens as we deal with most other hardy spring flowers, because if exposed to all the rigors of the early season at which they bloom, nothing but disappointment is to be expected. Hardy Cyclamens must not be committed to a common garden border in the same way as we plant tufts of Daisy and Arabis, and, except in warm localities where the soil is peaty, the border must be specially prepared for them. Those who grow *Ixias*, *Sparaxis*, and other of the newly hardy Cape bulbs, out of doors, are in just a proper position to do justice to hardy Cyclamens. A border facing south, sheltered with a back wall or greenhouse, or enjoying some of the surplus warmth from a stove or furnace, and consisting chiefly of peat and leaf-mould, on a warm and well drained subsoil, is the place for Cyclamens, *Tritonias*, *Ixias*, the hardy *Amaryllises*, *Alstromerias*, and myriads of the choicest flowering plants known, which need not so much the help of artificial heat as moderate protection against the scathing blasts and perishing sleet of our springs. In such a border in some parts of the south-western counties, all the species of Cyclamen could be grown, but anywhere the so-called hardy kinds might be cultivated with the certainty of success. We can promise to any one of our readers who will make up a border for plants of the kind just named, an amount of enjoyment far surpassing all that they have ever derived from the pursuit of gardening according to the established routine of making a grand summer display, and devoting every possible energy to the developement of the bedding system. But as we cannot now pursue this subject, we will just state that, if the position is well drained and sheltered, all that hardy Cyclamens require is a mixture of turfy peat, leaf-mould, and silky yellow loam, equal parts. This must be a foot to 18 inches deep, and when the bulbs are planted, the bed should be covered with 2 inches

of dung rotted to powder. The season for planting is October, and every succeeding October the bulbs should be taken up and replanted, otherwise the flowers get fewer and poorer every year. In planting, use silver-sand in contact with the bulb, and press the bulbs of *C. coum* an inch below the surface. The others press in slightly, in the way in which onions are planted. The bed should be covered during winter with 4 inches of tanners' bark, as a protection against frost.

CULTURE OF GREENHOUSE CYCLAMENS.

The usual method of culture is to pot the bulbs in autumn in successional batches, so as to ensure a successional and long-continued bloom. The same soil as recommended for border culture answers for plants in pots, if a fifth part of silver-sand is added to the bulk. The first potting of strong bulbs should be in small pots. When this is accomplished, place the pots containing the bulbs in a frame, and give them very little water. As soon as they begin to grow freely, increase the supply of water, but always be moderate with it, and as soon as the pots are full of roots shift to the next size, and use plenty of drainage. We find that we can grow very handsome specimens in 54-sized pots, but large old bulbs will readily fill 48 or 32-size. Whether in greenhouse or frame, the plants must have air as often as possible, but be kept quite secure from frost, and as soon as they show for bloom let them have plenty of water. As soon as the bloom is over, set them out of doors in a sheltered and somewhat shady place, and give water moderately, keeping them almost dry for three or four weeks, yet not so dry as to hasten the decay of the leaves. We have used them in groups for the margins of beds, for the sake of their richly-tinted and elegantly-formed leaves, during the early part of the summer, and very effective they have proved themselves as a relief to masses of rich color. Gather the seed when ripe, and as soon as the leaves begin to decay give no more water. When the leaves have entirely withered, store away in a dry place, the pots containing the bulbs, and so let them remain in the pots until required again for potting. Sometimes there is a little tendency in the bulbs to form new leaves, and continue growing very late in the season. This is usually the result of having too much water, as may happen in a wet season through the plants being always out in the rain. We cure this by a very simple method; we place the plants on the top shelf of a greenhouse, and there keep them tolerably dry, and so secure perfect ripening of the bulbs. — *Gardener's Weekly*.

Horticultural Notices.

PENN'A. HORTICULTURAL SOCIETY.

DISCUSSION ON HERBACEOUS PLANTS,
APRIL 5TH, 1864.

Mr. W. L. Shaffer in the chair.

Mr. Meehan presented the leading essay (see page 141.)

Mr. Walter Elder also contributed a paper.

The Chairman—I find field mice to be very destructive of some varieties of bulbous roots. Have suffered from their depredations for eight years past. One winter planted poisoned peas with the bulbs. The bulbs died, and the peas grew. Last winter put them into gas tar-water before planting and did not lose a bulb. This winter repeated it with equal success. Mice attack the tiger flower but not the tuberose or gladiolus.

Mr. Kilvington—Common field mice also eat the tiger flower.

Mr. Meehan—Lilies, when about 8 inches high, are often subject to a disease, presenting the appearance of a white frost; it often comes on after a warm night in spring, and they die off rapidly. The same disease sometimes attacks the gladiolus, just before the flowers open, especially when late planted.

Mr. Kilvington—Would attribute it to the condition of the soil. Lilies can be taken up with advantage in the fall. Mr. Butler's gardener was very successful with them in that way.

The Chairman—My French gardener took up Hyacinths, Tulips, &c., early, soon after blooming, laid them on the ground and covered with earth; left them thus six weeks, then lifted and stored them in a dry place, and planted out late in October, with marked success.

Mr. Meehan—Herbaceous plants are benefited by a slight protection of light brush or leaves with earth enough to keep them in their place. The hot sun striking upon them, when frozen, does the mischief.

Mr. Schaffer—Last year protected pansies with a coat of leaves and a few sticks on the top. They came out finely in the spring.

Mr. Kilvington—Last year I received native plants from Texas, among the Soap Berry, which stood the winter well. Verbenas are tender, yet they often endure the winter if well protected by bush. This winter I kept all my seedling Verbenas in cold frames.

Our native plants are deserving of much more attention than they receive. Many of them are far more beautiful than the high priced exotics, and are more esteemed in England as rarities than here where they are so common, yet so little known to those making collections. The Phlox is a native of America. Phlox subulata or Moss Pink, grows wild by the acre in Berks County. The Double Anemone is very beautiful, and though formerly abundant, is now lost. Among the attractive native plants I would name the Lobelias, Gentiana saponaria, and ochroleuca, Asclepias, &c. The native Lily is superior to the Foreign; the superbum grows in our swamps to the height of eight or ten feet. Lobelia cardinalis is a beautiful plant, the Asclepias is highly prized in England. The old fashioned Orange Lily, the cause of so much heated discussion and bloodshed in Ireland, has been found in our south western swamps. Its nativity is not given in the books.

Mr. Meehan—Is it not necessary to take native plants to other countries to improve them? The Lobelia fulgens is an improved variety of the Cardinalis. Here all of our wild plants always grow true from the seed. Hepaticas, Phlox, &c., sent to Europe, changed and improved. Very few native English plants improve in England.

Mr. Kilvington—I have twice seen white varieties of the scarlet Lobelia Cardinalis wild.

Mr. Schaffer—The improvement of our wild flowers in Europe is due to the greater attention and more patient cultivation there bestowed upon them. There are several varieties of the Gerardia, very beautiful, but hard to transplant and cause to grow in gardens. They bear large, showy spikes of handsome flowers.

Mr. Meehan—It may be somewhat parasitic in its nature, and hence difficult to transplant.

Mr. Kilvington—The Sarracenia purpurea, used in small pox is quite handsome. Violets we have too, in great variety, but not fragrant; they are much called for in Europe, as are also the Pipsiss-ewa and many other native plants.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA

(Continued from page 128.)

WILD CRAB APPLES.

An inquiry was started whether our Wild Crab (*Pyrus coronaria*) had ever been improved. No one knew of any variety of it. It was considered worthy of the attention of Pomologists. Its deli-

cious perfume, would render varieties of it delightful, could they be made as "good as they smell."

ACTION OF LIME ON SOIL FOR ORCHARDS.

Dr. Houghton thought after a crop of trees had been taken off, lime was useful in many soils as a corrective to the acid given off by decayed roots, which otherwise formed a matrix for fungi, which was deleterious to the succeeding crops. Nurserymen take off a crop of trees, and usually lay the ground in something else before they take trees again. This is probably owing to the decaying roots in the soil, generating a fungus, which would attack healthy roots of the same perhaps sooner than roots of other kinds. Where trees must go in again it is preferred by most growers to put in some very different kinds. In New Jersey the fruit growers prefer to plant Pears after Peaches.

Mr. Satterthwait thought the soil could be kept in a healthy state by good cultivation, so that there would be no fear of injury from parasite fungi from decaying vegetation.

Mr. S. W. Noble had not noticed much evil to arise from fungi on decaying vegetable matter. He had once an old orchard which he undertook to crop, but in a few years the trees became so much decayed, that he decided to take them out and replant. He put a load of chip dirt in each hole. The orchard is now a first class one. He believes with moderate top dressing, orchards will bear moderately every year.

Mr. Satterthwait had seen apples set in the places of old apple trees, that had done as well as any.

Dr. Busch employed lime together with salt, in decomposing tan and sawdust, which mixed with manure water, he had found an excellent top-dressing for orchards. His farm comprised sixty acres, every part of which, at different times, has had this decomposed vegetable matter. He makes about 100 loads of it per year. Uses the lime in large quantities for the purpose. Used about a bucket of air slacked lime to a load of this rubbish, the salt and lime destroys all tendency to fungi. He used the compost largely for Potatoes; and had not lost one bushel in fifteen since 1843. The salt and lime does not totally decompose the material. Has seen pieces of bark in the soil for years after. He would on no account plow his orchard. His orchard has not been disturbed for 20 years. Top-dresses with this stuff annually.

Mr. Merceron had seen vines grown in tan, very old, growing with great luxuriance.

Mr. David Miller, of Limerick, would prefer not

to plant in an old orchard—would not plow in manure, but would top-dress annually, and heavily. Likes to have trees branch close to the ground. The leaves which fall then do not blow away, and make a valuable winter protection to the trees, and as the lower ones decay, feed the roots, which in that case, hover very near the surface, which he would by no means plow or disturb. He finds low bushy trees grow *twice as fast* as trees on tall stems.

Mr. Longacre remarked that the well known fact of trees doing best on new land, tended to show that trees could not do so well planted successively on the same soil.

Mr. Rutter seconded this view. Peaches particularly would not do well where peaches were before.

Dr. Gross had an old worn out Peach orchard, wherein Peaches would grow scarcely at all. By simply dressing heavily with wood ashes, they did admirably well.

Mr. Harrison remarked that good succulent annual vegetables could only be raised by an abundance of enriching manures. In perennial woody plants, the use of strong fermenting material to make succulent wood, was the reverse of what we should aim at. In a vegetable we wanted sap—in wood solidity.

Judge Knox remarked that deep alluvial soils, no matter how poor, grew fruit trees faster and healthier, than the richest but shallow soils.

Mr. Josiah Hoopes remarked in reference to the fungi question, that whether the fact was or was not established, that fungi would attack healthy roots, there was no doubt that from some cause or other, raw and half-decayed leaf mould was injurious.

Mr. Rutter said old worn out soil favored yellows in the Peach.

Mr. Saunders had seen the yellows as bad in virgin soils as in any other. It was very important to look for the principle in all such discussion, and to trace closely the cause and effect. To illustrate with the manure question. The production of wood and the production of fruit, were opposite processes in vegetation. If we favored wood growth we had little fruit. If we favored too much fruit bearing, it was at the expense of healthy wood growth. It was essential to know what processes led to that object. This was the principle of all success.

He was not in the habit of praising any one, but could not illustrate his meaning better, than by referring to the great success and usefulness of the

Gardener's Monthly. He saw from the first that the journal would succeed, because it was evident its conductors had faith in principles. Founding its views on well ascertained principles, it was generally able to maintain its positions against all odds. With this style of introduction, even what he and others might, and doubtless often did consider extreme views, were eminently useful, and led to the examination of the principle involved, when more tame dissertations would be labor thrown away.

It was difficult at times to apply principles. The mistakes made were generally in their application. Some would say, what was good for dry soils was not good for sandy soils, but yet the principle in both cases would be precisely the same.

Mr. Parry said rotation seemed a law of nature. When Chestnut woods were cleared, Oak usually grew up, and the reverse, when Oak woods were cut away. The Oak followed the Pine, and the Pine the Oak—that was New Jersey experience. There was a sort of mystery about getting exactly to the application of principles, but we could come very near. Peach trees do not do well on rich wood clearings, they do best on worn out corn grounds. The Peach is not naturally a short lived tree—over rich soils is one great cause of early exhaustion. Saw Peach trees about four years ago, at Mount Vernon, that bore peaches in General Washington's time. If one could keep off borers and disease for three summers, trees usually did well for a long time after.

NATIVE GRAPES.

We cannot do justice to this part of the proceedings, which created quite an animated discussion, which will, no doubt, appear in full in the society's printed report, for the use of the members. It was said of the Miles grape, that it was the earliest of all—before Canby's August even.

Mr. Saunders gave instances to show that fungi would attack and destroy healthy Grape Vines. Had seen it spread from rotten Hemlock wood to the stem of Grape vines, and eat it completely off.

On motion it was adopted that Dr. Michener, one of the ablest mycologists of the United States, and a member of the society, be invited to prepare an essay on the destructive power of fungi—for the use of the society.

ON DWARF PEARS.

It was argued by many members that they actually sent out Pear roots in time; but that they bore early all the same, and never became so large as standard trees.

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THE GARDENER'S MONTHLY.

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THOMAS MEEHAN, EDITOR.
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JUNE, 1864.

VOL. VI.—NO. 6.

Hints for June.



FLOWER-GARDEN AND PLEASURE-GROUND.

All those who have set out trees the past spring, should take the first chance of a dry spell to loosen the soil deeply about them with a fork, and immediately after beat it down hard again with the heel, or some better 'clod crusher.' Innumerable lives of trees may be saved by this simple practice.

Good walks are the most striking features of a well kept garden. Weeds should be taken in time, and the labor of keeping them down will be very slight. The edges or 'verges' should be trimmed at every mowing of the grass-bordering; for which purpose a common sheep-shears, or grass-edging shears, made specially for the purpose and sold at most horticultural stores, should be kept on hand. Washing by heavy rains should be guarded against; or, when so injured, speedily repaired.

After the walks and lawns, the flower-beds should be a constant source of attention. If the plants appear to suffer by drouth, there is no better remedy than to place a fork around the plant and loosen up the soil deeply, without disturbing the plant more than can be avoided. After being thus loosened, it will not dry out near as much as before. Above all, keep the surface continually broken by hoeing and raking fine. Nothing is so sure a preventive of soil drying as a loose, porous texture.

Mow lawns often, if you would have them green and velvety. Keep the scythe sharp; usually mowers do not use the grindstone often enough. Common farm scythes are not fit for lawn use; rivetted and short scythes are the kind to get. If a lawn is mowed often, the grass need not be raked

clean,—the sappy blades soon wither, and make a manure for the roots. The longest should be raked off, or the lawn will have a littery appearance.

The watering of flower-beds in a dry time should not be done often; but when necessary, done thoroughly.

Bulbous roots, when done flowering, and the leaves have faded, should be taken up and dried,—mixed with chaff, or other light loose material, placed in paper bags and stowed away in a dry place till fall.

Cut off the flowers of roses as they fade,—the second crop will be much better for the attention. Seeds of all flowering plants should be also taken off; all this assists the duration of the blooming season.

Propagation by layering may be performed any time when strong vigorous-growing shoots can be had. Any plant can be propagated by layers. Many can be readily propagated in no other way. Cut a notch on the upper side of the shoot, not below, as all the books recommend, and bend down into, and cover with rich soil. In a few weeks they root, and can be removed from their parent. Stakes for plants should be charred at the ends before using, when they will last for years.

No trees, Evergreens especially, should be suffered to have grass grow about them for a year or so after planting. It becomes 'rank' in the deeply loosened soil, abstracts moisture, and otherwise seriously interferes with the tree. When the tree gets a fair start, grass does less injury, and when it becomes a tough sod, and the tree by its shade, or say by frequent mowing keeps the grass short, the grass roots do not penetrate deep, and the sod is a benefit, by keeping the surface spongy, and the substratum cool.

Evergreen hedges will require attention as they grow. Where the height desired has been attained, the top and strong growth should be cut back while they are still watery. The side shoots need not be touched till past midsummer. All wise people now employ the conical shape for hedges. In cutting

back the top growth at this season, the conical form can still be preserved.

Every opportunity will, of course, be taken to keep down the weeds. As soon as they are barely visible, the ground should be hoed over lightly, and the surface afterwards broken fine and smoothed over with the back of a small rake. This not only gives a neat and cared for appearance to the flower-beds, but the free admission of air, which a thorough pulverization of the surface soil effects, is one of the best means of keeping the soil from drying out, and thus avoiding the necessity of frequent waterings, which, though they cannot at times be avoided, have always attendant disadvantages. Should the soil so finely raked appear to 'bake,'—that is, form a crust on the surface,—after heavy rains, all you have to do is to hoe and rake it over again. It will be any thing but labor lost on your flowers.

Many herbaceous plants, such as Phloxes, Hollyhocks, and similar plants, that are scarce and valued, may be propagated now very easily by taking portions of their flower-stems before the flowers open, and inserting them as cuttings in a half-shaded, cool, and not dry situation. Layering of many things, shrubs, half-shrubby perennials, &c., should be done before the young wood becomes too hard, if good plants are required the first year. Most plants root more quickly by having a notch cut in the layered shoot. Good, rich soil, put just about layers, is very important. Good soil favors an abundance of roots. One of the greatest mistakes in gardening is the prevalent notion that plants in a poor soil have a greater proportion of roots than in a rich one.

Many parties have a difficulty in keeping trellises, when covered with a weight of vines, from becoming 'top-heavy,' and blowing over in a wind. This can be remedied by nailing a cross piece to the trellis a few inches long, just above the ground, or even two pieces, making four cross-shaped arms. This will effectually prevent 'swagging,' no matter from what part of the compass the rudest winds may blow.

Dahlias must not be allowed to bloom too early. Keep them growing well till fall, at any cost. If they become stunted by early flowering, a few miserable sundried July flowers will be the poor reward.

FRUIT GARDEN.

Red spider and other insects closely follow on the heels of a dry atmosphere. They must be watched, and nothing suffered to injure the leaves till by na-

tural maturity the plant has no longer use for them.

Grapes coming in bearing should not be permitted to perfect large crops of fruit while young. It is excusable to fruit a bunch or so on a young vine, 'just to test the kind,' but no more should be permitted till the vine has age and strength. Vigorous growth, and great productiveness, are the antipodes of the vegetable world. Encourage as much foliage as possible on the vines, and aim to have as strong shoots at the base as at the top of the cane; this can be done by pinching out the points of the strong shoots after they have made a growth of five or six leaves. This will make the weak ones grow stronger. Young vines grow much faster over a twiggly branch stuck in for support than over a straight stick as a trellis, and generally do better every way. Where extra fine bunches of grapes are desired, pinch back the shoot bearing it to about four or five leaves above the bunch. This should not be done indiscriminately with all the bunches. Too much pinching and stopping injures the production of good wood for next season. These hints are for amateurs, who have a few vines on trellises; for large vineyard culture, though the same principles hold good so far as they go, they will vary in their application.

Strawberries, when grown in hills,—the most laborious but most productive method of growing them,—should have runners cut off as they grow, and the surface soil kept loose by shallow hoeings occasionally. Short litter, half rotten, as a mulch is also beneficial. Lawn mowings are often applied, but with little benefit. Where they are grown in beds, they should not be too thick, as they starve one another, and the crop next year will be poor.

Blackberries are not ripe when they are black. Leave them on till they part readily from their stalks.

Currants are so easily grown as to require few hints for their management. If they throw up many suckers, take but a portion now, instead of waiting till winter to cut them away. The Currant borer is a great pest, eating out the pith of the young shoots, and causing them to grow poorly, and bear but small fruit next year.

Gooseberries should have the soil, and even the plants, if it were practicable, shaded a little. Dry air about them is one great cause of mildew.

Stone fruits will now be attacked by curculio, and no means should be spared to keep it down. Those who try the jarring process should saw off a branch on the main trunk, a few inches from it, to hammer away at. Some we see hammer the trunk, but

this cannot be done suddenly and hard enough without injury to the tree.

Leaf blight in Pear trees frequently shows itself at this season of the year; probably owing to too rich a soil, as those growing in highly cultivated vegetable gardens are always the worst. In nursery seedlings, it is worst, in the first few years, while the roots are in the upper and rich surface soil,—after the roots go down into the poorer subsoil, as in the Pear they seem to delight to do, leaf blight is not so formidable. In old neglected Pear orchards, though there are many penalties to pay for said negligence, leaf blight is not one of them.

Fire blight—the apoplexy of Pear trees by which they often die in day,—is probably traceable in part to the same cause as leaf blight, as trees raised and grown in what may be termed a poorish soil, never have fire blight.

As it is now the settled conviction of intelligent cultivators, that the Black-knot in the Plum and Cherry is the result of fungoid action,—whether as the consequence of disease, or by the immediate action of fungi on healthy tissue,—the only recommendation we can give is to cut out and burn them as fast as they appear. Whatever spores may be matured, will thus be destroyed, and many a new crop be ‘nipped in the bud.’ Besides this, as it is known the curculio and other noxious insects deposit their eggs in the soft tumors, many of these will be destroyed at the same time. Also attend to whatever may tend to the general health of the tree. Strong vitality is one of the best precautions against the fatality of an attack.

In the interior department, peaches that have been slightly forced will be about maturing, and the atmosphere must be allowed to become dryer by admitting more air and using the syringe less freely. This is necessary, not only to perfect the flavor of the fruit, but to mature the wood properly for next season's fruit. All of this has to be done with caution, as a sudden change from a moist system of culture to a dry one will be certain to injure the tissue and breed disease.

VEGETABLE GARDEN.

Peas for a fall crop may be sown. It is, however, useless to try them, unless in a deeply trenched soil, and one that is comparatively cool in the hottest weather overhead, or they will certainly mildew and prove worthless. In England, where the atmosphere is so much more humid than ours, they nevertheless, have great difficulty in getting fall peas to

get through free from mildew; and to obviate these drying and mildew-producing influences, they often plant them in deep trenches, made as for celery, and are then much more successful with them.

Cabbage and Broccoli may still be set out for fall crops, also requiring an abundance of manure to insure success.

Lettuce, where salads are in much request, may yet be sown. The Curled Indian is a favorite summer kind; but the varieties of Cos, or Plain-leaved kinds, are good. They take more trouble, having to be tied up to blanch well. Many should not be sown at a time, as they soon run to seed in hot weather.

Endive is becoming very popular as a winter salad. Now is the time to sow. The Curl-leaved is the most desirable. Sow it like Lettuce.

Celery for early use is often planted out this month, though for winter use July or August will be early enough. It is best to set out in shallow trenches, for convenience in watering, the celery being fond of hydropathic appliances. If the ground has been deeply subsoiled, and the subsoil well enriched, the trenches may be near a foot in depth, for convenience in blanching; but beware of planting down in poor, barren subsoil. Many plant in double rows. Where very superior celery is not an object, this will do, but the single row system is the best for excellency. The season is now arriving when the advantages of subsoiled ground will be apparent. In such soil plants will grow freely though there be no rain for many weeks. Some of our best growers now plant entirely on the surface, and depend on drawing up the soil, or the employment of boards or other artificial methods of blanching.

Cucumbers for pickling may be sown this month.

Parsley for winter use may be sown now in boxes of rich soil, and set in a cool, shady place till it germinates.

Asparagus beds should not be cut after the stalks seem to come up strong, or there will be but a poor crop the next season, and the beds will ‘run out,’ in few years.

The Swede Turnip or Ruta Baga should be sown about the end of the month. A well-enriched piece of ground is essential, as by growing fast they get ahead of the ravages of the fly. Manures abounding in the phosphates—bone-dust, for instance,—are superior for the Turnip.

Sweet Potatoes must be watched, that the vines do not root in the ground as they run, which will weaken the main crop of roots. They should be

gone over about once a month, and with a rake or pole, the vines disturbed somewhat from their position.

Communications.

ANNUAL ADDRESS

Delivered before the Fruit Growers' Society of E. Pennsylvania, at Norristown, Feb. 17th, 1864,
BY PRESIDENT R. A. GRIDER, OF BETHLEHEM.

As the subject of Grape Culture, both for the table and for wine, is one of general interest, and of great importance to every member here present, some remarks by me upon that subject will be diffidently offered. I would premise that the opinions to be expressed were formed upon actual experience and observation, and are my convictions of to-day; whether those convictions are to remain the same through future seasons you will not ask me to promise in advance. I call on each and every one of you to examine for himself,—either to confirm or to disprove. If you do so, the aim and object of this society will be attained, and we shall progress.

That Grape culture has assumed vast proportions in the United States, you already know,—the number of acres planted having greatly increased, and it is becoming an important product of our country, although general success has so far not rewarded the growers,—the rule is *Failure*; the exception, *Success*.

The impression on the public mind seems to be that it is bound to succeed. Vineyards have greatly increased: the war having in a great measure excluded foreign wines, owing to their enhanced value; which circumstance also aids to stimulate our native productions.

From the evidence gathered by this society, through a series of years, embracing the State of Pennsylvania, from evidences of kindred societies, throughout the Eastern, Middle, Northern, Western States of the Union; through the public prints and various other sources; the scarcity of fruit and small quantities of American wines; we are led to the conclusion that open air Grape-growers (calculating a series of at least ten years and speaking generally), are not paid for their labor and outlay; and are not rewarded with the success of other branches of agricultural industry.

Abandoned vineyards are seen in many localities; inquiry is answered, that success at first proved too short-lived. We cannot always trace the want of success to the mode of pruning: as various modes practiced were attended with the same results; the

evidence generally amounts to, "The vines generally are well loaded with fruit, but disease of some kind prevents success."

In the 'Report of the U. S. Commissioner of Agriculture,' in that portion devoted to the 'National Experimenting Garden,' we find the following remarks:—"While the introduction and propagation of new and valuable plants will always command a large share of attention, as one of the principal objects of the garden, still it is believed that investigations having in view a more thorough knowledge of Diseases of Plants, especially with reference to those of our more valuable and generally cultivated fruits, should receive more attention than formerly."

Firmly believing that good will result if the suggestions above quoted are acted on, let us give the subject the attention asked for by the National Government, and we shall thereby advance the general interest, and our individual welfare.

THE DISEASES OF THE GRAPE.

When our Native Grape-vines are properly pruned, kept clear of grass and weeds, tied to trellises or stakes, and receive ordinary care, the causes of failure, other than by early frosts, winter-killing, hail storms, or by long-continued rains when in bloom, and over which the grower has no control, are by *Mildew*, by *Insects*, and by *Rot*.

MILDEW

we are told is caused by sudden changes of temperature, and by currents of atmosphere: from warm to cold, and cold to warm; causing a mould or dusty coating, which dust destroys the vegetable substance and stops growth and expansion.

As there are various kinds of mildew, it is believed that they arise from various causes; but as that belongs to scientific minds, and as that subject is not yet definitely settled to the conviction of all parties, we will endeavor to find a

Preventive against mildew.—Protection is most generally resorted to,—protection by walls of stone, brick, wood, or wooden fences, hedges, planting of Evergreens, etc.; and in some localities, such protection is not needed, as nature has already provided sufficient; covering or mulching the ground under and near by the vine, or covering it above in part by means of boards or the eaves of a house; by allowing the vine to ramble among the branches of a tree; in greenhouses by sulphuring the ground and fire-flues.

It first appears when the young grape has attained to about the size of a *pec*. It spreads rapidly, and at once stops the growth of that portion of the

plant on which it settles; and if not quickly removed, the fruit loosens and drops, and the crop is lost.

Various modes are practiced to destroy the mould on the fruit. In some districts in Europe they wet the bunches and distribute Flour of Sulphur on them while wet, by means of a white-wash brush, or bellows.

One of the German Horticultural Societies, located in one of the wine districts of Germany, deemed the following mode so much superior to the former, that circulars were sent by the society to all the Wine-growers, recommending them to use Sulphuret of Potassium (*Liver of Sulphur*), diluted with water, to be applied soon after the plants are affected; this is practiced with marked success, and destroys the *Epiletz* or mildew in 30 days. 3000 plants required 35 pounds.—See *Winter Bud*, by F. RUBENS.

The latter mode distributes the Sulphur over every part of the fruit, being liquid; while the former distributes it very unequally, and is therefore very imperfect.

Liver of Sulphur is a greenish substance, which druggists keep in bottles to prevent its dissolving, and decomposing by exposure. It dissolves thoroughly with water, and when applied spreads itself over every portion of the fruit bunch. I have no doubt the same remedy will answer to clear the Gooseberry of the mould also.

Mildew on the fruit is the least of the three great evils which annoy the grape-grower. Mildew does not appear every year, and some varieties are not subject thereto. In the fall of the year, when the grapes begin to ripen, the foliage is oftentimes destroyed by it; when that is the case, the fruit cannot ripen, and the crop which has escaped all other ills, becomes a failure. Mildew on the leaf cannot be cured,—if not prevented by means of mulching or other protection, it must be endured.

INSECTS

are the second great evil. Various kinds of insects feed upon the Grape-vine. They appear as soon as the vine begins to grow, and continue to feed upon them until frost destroys the leaves and tender shoots. Where but a limited number of vines exist, the ants, wasps, and birds generally keep the insects in check, but in vineyards, where abundant food, and great chances to propagate their species, is found, the insects obtain control, and then it becomes necessary to destroy them, or the crop will be ruined. To destroy them is to prevent their appearing again in great numbers for years to come.

Before describing the various tribes which annoy

the Vine-dresser, let me say, that *large Bugs* and *large Worms* are not worth mentioning, as they do comparatively little damage, and are easily caught and destroyed; the *small* ones, however, are hard to catch and difficult to destroy, and do immense damage.

The *first* which appears in spring is the *bluish-green Bug*. It begins to operate as soon as the vines begin to grow; they bore into the bud, and work into and through the tender blossom ere it is fully developed, and injure or destroy it as chance may happen.

The bugs are easily taken and destroyed; they work during warm sunshine; by passing along the vines they are readily detected by holding a hat, or any thing else, beneath them, and reaching for them with the hand: they immediately drop into the vessel beneath, where they can be destroyed. If this precaution is practiced early in the season and repeated several times, very little injury will accrue from the Green-bug.

The *second* is a *blackish colored Worm*, which destroys all the young foliage and blossoms. Whether the progeny of the Green-bug or not I am unable to say, but they generally appear where the Green-bug was found. The slug is easily destroyed by dusting air-slacked lime over the vines affected.

The *third* is the *Rose-bug*. This was formerly a great pest; it delights to feed on the grape blossoms when in bloom. As the bugs appear in great numbers they are often very destructive. Since the introduction of that fashionable tree, the *Ailanthus*, the blossoms of which are preferred by the Rose-bug to the Grape-vine blossoms, they have almost entirely disappeared,—the *Ailanthus* blossom being a deadly poison to the bug. Where they still are destructive, it would be well to plant a few of that variety of tree. Here we find a plea for the despised *Ailanthus*.

All of you, no doubt, have noticed that your vines have been damaged, by some means, when quite young and tender; the fruit also is marked with black spots, which, if few in number on one berry, will not do much injury; if more spots are found the size of the berry is decreased, and if many, they oftentimes do not ripen, but remain hard, although the color changes, and at other times, both the fruit and all the shoots and foliage are destroyed. In this way I lost four or five crops in succession of two acres of Catawba vines, without being able to discover the cause of the damage; neither could I ascertain any thing about it, from members of the Pomological Society, or the mem-

bers of this society, both of which I joined in order to learn how to remedy the evil. Nothing reliable could be found in the various works on Grape culture then existing. CHORLTON, in his work, treats on that very subject, and attributes it to the rays of the sun shining through drops of water suspended from the grape leaves, forming a lens, and thus burning a black spot into the tender fruit. Upon examining, however, the spots were found on all sides where it was not possible the sun's rays could reach, it became evident that a different cause existed. As the evil is spreading, and we hear our oldest and most observing members complain of the same,—as even the sample bunches brought to our exhibitions are oftentimes full of spots,—I will venture to offer a different theory as to the cause of the *black spots*, than that found in Chorlton's book, to which I invite your attention, as the theory can be established or overthrown in a single season, by giving the subject your attention. If the theory be wrong, you will be doing your duty to overthrow it; if correct, to aid in establishing it, in order that others may share the benefits of our experience:

The Theory of the cause of the black spots.—As soon as the vine begins to grow, with the aid of a magnifying-glass, you will be able to discover glassy white spots or eggs on the tender shoots; they expand and are soon visible to the naked eye; as they grow larger, they change color, becoming more yellowish and more opaque; the shape also becomes oblong; they attain in size to about 1-16 of an inch, when feet and wings become visible, and a perfect *Thrip* or *Grape-vine Hopper* (?) emerges from the ovum or egg. *Wherever an insect was matured, there a spot will be found*; if many insects on one place—many spots. We are led to believe that the insect feeds on the tender fibers or the juices until matured, which causes the wound; but we go further, and say that the wounds on the young vine shoots, which look like festering sores, first being of a crimson-red color, then turning brown, and lastly black, causing the shoot to break off, stopping its growth, and ruining it entirely,—acting upon it like a poison,—is caused by the *same insect*; the variety in the form of the wound—those on the berry being *round*, and those on the faster and longer-growing shoots being *long*—must be attributed to the difference in growth: the insect causes but a small wound, but growth expands it, and makes the injury greater.

The wounds can be found on every young part of the vine, on the leaves, tendrils, leaf-stems, shoots, fruit, etc., and throughout the whole sea-

son until cold weather destroys the foliage, the only condition required is young and tender food; they are, therefore, only found on the newest growth.

The effects of the depredations caused by this insect are very serious when they appear in great numbers and obtain full sway: the entire crop, the entire growth, is destroyed; not a green leaf can be found; the vines are left naked and have the appearance as if fire had passed over them.

The second growth starts from latent buds, generally succeeds in ripening its wood, but the crop is destroyed, and the vines injured for years to come.

The Remedy.—The insect being very small and active, cannot be caught by hand, neither could any mode be found to entice it into bottles or on sticky substances. It is found on the under side of the leaf, is inactive during cool weather and at night. The most practical mode of destroying them is by torches made of dry Mullen stalks, or straw dipped into tar or coal oil, on any warm dark night, when the leaves of the vine have attained about one-fourth to one-half their full size. Two persons are required, one to shake the vine, which starts the insect, the other to *pass* the torch beneath the agitated part: the insects fly into the fire and are consumed, causing a hissing sound. If this is done several times, the matured insects will become rare. It is necessary to state that the torches should be carefully used and not kept at one place long, else the remedy might do more damage than the insects. To destroy their brood it is only necessary to dust the vines when moist with dew with powdered air-slacked lime; the few remaining eggs are destroyed by the ants and wasps: the ants delight to feed on the ova, and seem to exercise much judgment; while doing so they pass along examining the brood carefully lifting them up and replacing them (in order, we suppose to test whether fully matured and tender), and examine well ere they determine which to carry off as food.

Caterpillars and worms are blamed for the dropping of single berries and bunches of grapes from the vines: they feed on the stems. The best way to prevent that would be to destroy them in every part where they build their nests.

The Scab is believed to be caused by the sting of an insect, causing it to grow one-sided; the berry remains hard internally, although the outside does not betray the disease. It is not so injurious as the

Worm, which hollows the berries, and passes from one berry to another where they adjoin, caus-

ing greater damage. I have not examined into the origin of this worm.

Excrecences.—Of late years the smooth-leaved varieties, such as Taylor, Clinton, and others, have been damaged by excrecences on the foliage and young and tender vines, which appear in the month of August. The disease may become formidable, judging by their number and their rapid increase. May we not consider this a species of gall? In order to prevent the brood maturing, we cut off the parts affected with a sickle, and left them to dry in the sun; the fruit matured well, and no great damage has resulted in consequence of robbing the vines of extra foliage.

A *Worm*, which appears in the summer, and is still found late in summer and early autumn, inhabits the lower side of the grape leaf, upon which it feeds: the whole family keeping together on the same leaf until it is devoured; it can be easily found, and is readily checked by destroying them.

Wasps, *Yellow Jackets*, *Bees* and *Hornets* also damage the ripened fruit, by feeding thereon. This can be readily prevented, as they prefer the Catawissa raspberry to the grape. In order to have a full crop in grape season, plant a row near the grapes—cut them down; every fall or spring let them start fresh, and they will yield largely in the fall. My friend Mereeron can direct you where and how to obtain the plants.

GRAPE ROT.

It is said the late Nicholas Longworth offered \$10,000 to any one discovering the cause of Grape-rot, and that the reward was never claimed by any one.

We hear various theories in this our day as to its cause. Some attribute it to the nature of the soil being too close and tenacious; but are differently convinced when rot is shown to exist on open porous soils also. It is again attributed to a deterioration of varieties, owing to over propagation; to the sting of an insect; to an overflow of sap, and a want of exhalation: the plant not having leaves enough to exhale rapidly, causing the berries to crack and rot; but no such wound can be found on the berry, neither does the cutting off of roots, which stops the overflow of sap, stop the rot. Others ascribe it to a want of proper nourishment in the soil, in order to mature the fruit, or too dense foliage, or too little foliage; to the dry winds of the Simoon passing from African deserts to this continent; to a fungus; and to other causes. I believe it is safe to assert, *that we know nothing as to its cause*; that not a single principle assigned as one of the causes has been found the same in all

localities; we are entirely ignorant as to its cause, and our philosophy is at a full stop. Those who have had most chances to observe, generally agree that they know nothing of this greatest enemy to grape culture, and which destroys entire crops in a few days or weeks. It is a well-known fact, that if rot starts during dry and warm weather, a rain stops it at once; should the rain continue a few days, they rot faster than ever, and thus it continues until the grapes color, when it stops; but, alas! but few berries remain to be ripened.

The varieties most subject to rotting are Catawba, Isabella, Diana, ToKalon; the Delaware and Concord rotted badly also the past season.

We all have heard the prophecy:—"The United States must become the greatest wine producer of the globe, it having more acres suited to its culture than any other."

I have some doubts as to the truth of the prophecy, unless means can be found to stop the rotting of grapes. It is a wide-spread evil, encountered in all parts of our country, California, perhaps, excepted; it destroys part of every crop, and oftentimes destroys it entirely.

We have thus reviewed the dangers and difficulties which beset the prosperity of the Vine culture of our country. What reason have we to hope for an abatement of the evils? Upon what must we ground our hopes for a better prospect before us?

The incentives to *industry*, to *energetic efforts*, and the grounds for brighter prospects, are not less in our career than in every other department of husbandry. In what field have we not seen difficulties of all sorts—from frosts and snows, from winds and rain, from hail and sunshine, from insects, and from droughts and blights—all have devastated with relentless ruin the best prospects of the farmer in every region of this earth.

The growers of various productions have the same difficulties to encounter. The curse of Cain is not lifted from a single one of them, and man must continue to eat his bread at the price of the sweat of his brow.

It is our privilege to live in an age, though cursed with its dark trials, bitter enough to expiate the misdeeds of centuries, still blest beyond all ages which have rolled before it, in the possession of knowledge, and illuminated by the glow of science, as no years of the great past have been before. Hand in hand with the plow and the pruning-hook are now advancing the beacons of a surer knowledge, and the great truths of physiology, of chemistry, and of geology, lend their guiding voices to cheer the husbandman in every department of his labors.

True and perfect knowledge may still be far, very far beyond our grasp; yet no year, with its load of gains, or its void of disappointments roll away, which does not contribute a valuable store to the knowledge we have gained.

It has been my duty not to congratulate you upon the success of your efforts; not to lull you to a fatal security, by pointing to results already accomplished; for I could readily show you familiar facts, coupled with details of great success, where the rich offerings of the fruitful vine have poured a full reward upon the labors of the cultivator; but desired rather to guard you like a sentinel against the stealthy foe, who comes upon gauze-like wings in the glittering sunshine, or with measured pace by night as the ravaging worm, or the *mysterious rot*, which comes alike in sunshine, in shower, and at night—all enemies most dread and dangerous, and yet not one of them against which we are utterly without some defence.

Facts are accumulating even upon the mysterious Mildew, and many analogies already point to directions where important solutions are far from improbable.

The Vine disease of Europe, it has been proved, is caused by a Fungus.

The Potato-blight at one time threatened that invaluable tuber with extermination, and this calamity was promised through the agency of the same mysterious family, an invisible fungus; already we begin to understand and to practice certain rules by which the destruction is prevented.

More recently, science has pointed to other curious and important facts, small and slight in themselves, yet as they accumulate, important and critical in directing our energies. Among ourselves it is well known, that certain families of our beautiful and beloved Vine, are more liable to mildew and rot than others—that the same varieties in different soils and situations possess greater powers of resistance. We know that some are entirely exempt in any situation. I need not call your attention to the hopeful side of the picture.

If time were allowed, your attention would be called to the interesting facts upon the subject of Fungus attacks, which abound in the works of Carpenter, the great English Physiologist; in the papers of our own Professor Leidy upon this interesting subject.

Parasitic fungus growths abound under favorable circumstances almost everywhere. Every breath which enters our nostrils carries countless spores to the deepest recesses of the human lungs. In some diseases the plants are found fully devel-

oped in the human body. They infest the infant's mouth, and even the breast of the mother. The Barber's Itch and Scald Head are attacks of vegetable fungus. How then shall we hope that our vines be entirely free?

Observation has proved that the spores or germs abound in every direction, and acquainted as we are with their wonderful development, energies and growth, we are filled with wonder that every corner of our fields are not occupied by them, to the exclusion of every green herb. But a wonderful Providence has thus far preserved our crops and our lives.

The investigation of the causes of Rot, mysterious as this pest may seem, may not be a desperate task. Analogy may at some day develop the law we desire; and those of us met here to-day, may yet live to smile at a result not less surprising than the problem of Columbus' egg. It is certain that we are still in the infancy of Grape culture in this country; who will not say that, with intelligence and perseverance, we may not hope on—hope ever—and hope for the best.

Yes, hope remains. Some of the smooth-leaved varieties, such as Taylor, Franklin, and Gravel, have so far not rotted at all; Clinton only a very little; Herbemont and Norton's Virginia, also, of that class, are likewise free, I am told. Then there is room to exert ingenuity. Let us produce a cross of the smooth-leaved varieties, of better quality and larger in size than now exists; perhaps one can be produced free from rot, if so, it will be a mine of wealth to the country; and, unless that be possible, grape growing must remain in the hands of amateurs, or be conducted in glass structures, and open air grape culture, on a large scale, will continue to languish.

I call on you as members of a society who have for years shown disinterested patriotism, and show it now by your presence here to-day, to continue in the good work. Let your public spirit not flag or tire; let us make efforts in the direction indicated. Allow me to hope and wish that at some future time it may be said, that owing to efforts made by members of this, the Fruit-Growers' Society of Eastern Pennsylvania, the United States became the greatest wine producing country on the globe.

I thank you for your kind attention to this my maiden speech, and trust that our deliberations may tend not only to our own, but to the benefit of the public in general.

THE CATAWBA GRAPE.

BY JOHN REDNER, PHILADELPHIA, PA.

I fully coincide with a remark made some time ago by the Editor, that new fruits are mostly superior to old varieties, because they are new,—in other words, the vigor which seedlings possess, improves them for a time, until age debilitates the vital powers of the plant, and renders its once superior qualities inferior. Perhaps it is not age merely that causes this retrogression of character; but yet it is evidently the incidentals of age, we may call it treatment, climate, or what we will.

Be this as it may, the Delaware seems to me now better than the Catawba, and the Concord better than Isabella; and yet, good as they are, I am sure they are no better than I have eaten Isabellas and Catawbas in days gone by. With regard to the Catawba, I occasionally meet yet with a bunch far exceeding, in my opinion, the best Delawares I ever ate. I suppose this opinion will hurt somebody's feelings. No matter, I am not objecting to their preferences, but stating my own.

Imagining there may be others who have a fondness for the Catawba grape as well as myself, I offer a few notes on what seems to be with me its most successful management.

I think of all the grapes I know, the Catawba likes a warm soil, a sandy soil, a rich soil, and to have its roots near the surface of the soil. No grape is so impatient of wet feet. If the soil is heavy, raise it above the surface at least a foot: this is quite as good as underdraining. In fact though possibly I am opposing men of more practice and of more experience than I pretend to have, my gardening operations being confined to less than half an acre in the suburbs, I consider underdraining for grape vines money thrown away—raising the soil, in my opinion, effects the same object, and is better for other advantages.

My Catawbas are on a bed raised about one foot above the natural, and is about 10 feet wide, from thence sloping easily to the natural grade of the ground. When the vines were first planted, the soil was dug up deeply, first before the overlaying foot was put on,—and it was liberally dressed with rotten hotbed manure, and a small quantity of bone-dust. Since then it has had no manure of this character. Taking a hint from the forests, I covered my bed with leaves from the street trees in November, and on these leaves put about quarter of an inch thick of road sand, washed after heavy rain storms into a gutter near my house. Every year I add a few of these leaves and sand; and they remain there without ever being disturbed.

Though I have followed this practice some eight years, I do not notice the raised bed get much higher. I am satisfied the sand and the leaves together make all the nutriment necessary for the proper food of the vine.

My grapes, though they are equal to any I ever see in the market, do not always bear the very superior fruit they sometimes do; but the vines, are healthier than any Catawbas I know of, and the fruit always better than any grown near me. My neighbors, in fact, consider all the Catawbas a failure except mine.

I think my vines would be superior to what they are but for very bad pruning. Previous to subscribing for the *Monthly*, I never saw a horticultural work; and it is comparatively recently that I have understood the value of proper pruning. I am inclined to think they were 'pruned to death,'—at any rate, the past three years they have had much more wood left on the vines, and longer canes left, and I think there is a marked improvement in the health of the vines.

The bunch I gave you last fall, and which you expressed yourself so much pleased with, was from a cane grown from an old stem I laid down after reading an article of Mr. Bright's in the *Monthly*, three years ago. As I have said, my vines have not had very scientific pruning, and the canes were getting quite naked below.—all the strong bearing canes coming from out of the old wood at the top. I took down from the trellis one of the worst of these canes, and cut down the topmost bearing shoot to near its junction with the old wood. This old cane was then laid down about six inches underground, coiling it up as much as possible so as not to extend too far away from the trellis. The cane was buried to the end, leaving only the few eyes of the last year's bearing wood above the earth. The shoot that came up was enormous, and was trained up a stout bean-pole; and the following fall it was left with about seven feet of cane, and the fruit referred to came from this cane, and was the best I have had for some years.

I do not take much credit to myself for my superior culture of the Catawba grape. Luck had more to do with my raised bed than science, for the digging of the ground was done before I knew I had the earth to spare to make the bed, and it was placed there more because I did not know what else to do with it at the time. It is subsequent observations on their growth that convinces me the plan is a good one.

Your appreciation of the fruit tasted, led me to make these notes, which you can use for the

Monthly or not as you may think of interest to its readers.

FURNACES INSIDE GREENHOUSES.

BY A. L. PENNOCK, JR.

In the April number of the *Monthly* I. M. objects to the plan of inside furnace arrangements, upon the grounds that the outside system gives more heat, more space for plants, no dust, coal, or fire-wood in the house. He says, the trap-door I speak of, to allow the heat to ascend, would, he thinks, have the opposite effect by the cold air, in passing down; also the space above the furnace would be comparatively useless, being the coldest part of the house. As I suppose he does not understand my plan, I will repeat part of it. A conductor, terminating near the mouth of the furnace, supplies the fire with air from outside, thus preventing the cold air from entering through the crevices and among the plants, in place of the warm air, passing off by the flues. There is, also, another advantage in the conductor. I allow more cold air to enter than is needed by the fire, which surplus, being warmed by the furnace, ascends through the trap-door, as in the ordinary hot-air furnace for heating dwellings. So far from plants being frozen solid in the space above the furnace, it is the warmest and most valuable part of the house, and occupied by the most tender plants. The coal and wood are kept in a cellar adjoining the furnace, and are put in through a trap-door in the floor, and, as that occurs but once, or at most twice, a year, the disadvantages are slight. Smoke or gas is obviated by closing the warm-air trap-door, and opening the communication with the outside, to allow them to escape. He agrees to the space between the furnace and the greenhouse walls, as, where it is built in the walls, the loss of heat is enormous. If it is enormous when built in the walls how much greater must it be when the furnace is outside? I am decidedly in favor of my plan of inside furnace, as the arrangement is neater and more compact, the fire can be regulated without exposure to the storm and cold in winter, and, consequently, will receive better attention, and, comparatively, no heat is lost.

WESTERN GOSSIP.

BY DR. W. BIRD, MT. PLEASANT, HENRY COUNTY, IOWA.

I have lived at this place, in South-eastern Iowa, about fifteen years. Once, during that time, the

thermometer went down to 25° below zero, and last winter to 29°, and, as I have been somewhat observant of the effects of the climate here on different fruits, I propose to give you a few items. As such items from other parts of our country are of interest to me, I suppose these may be so to others. Last winter, at the extreme of cold, the ground was heavily covered with snow, which, undoubtedly, had a modifying influence.

1st. As to cherry trees. The Heart Cherry trees are all killed. Reine Hortense, Early Purple Guigne, and Belle de Choisey are also so badly damaged, that they will never recover. May Duke fruit-buds all killed, but trees uninjured. Belle Magnifique, Late Duke, Royal Duke, Carnation, Early Richmond and English Morello are uninjured, and now give promise of an abundant crop of fruit.

Peach trees and apricots are both damaged about alike. Part of the limbs seem to be entirely dead, but here and there you can see a green shoot struggling its way into life.

Apple and pear trees have passed the extreme cold uninjured in body or fruit-buds, and now give promise of a more than usual abundant crop of fruit the coming fall.

In regard to dwarf pear trees, I will say, in passing, that I have been experimenting with them here for the past ten years, and now have full faith in them. They need a good preparation of soil before planting, and proper cultivation afterward, perhaps more so than with standard pear trees, but I am well satisfied that the dwarfs are not so subject to blight as the standards. Perhaps the same mode of cultivation would make the standards equally exempt from blight.

Grapes. None that I have in cultivation stood the cold but the Clinton. The Catawba, Isabella and Diana, where unprotected, were killed to the ground. The Delaware, Concord and Hartford Prolific badly damaged, but not so completely killed as the first named. I am well satisfied that winter protection, by a covering of straw, corn-fodder, or something of the kind, will alone secure us a reliable crop of grapes of any kind that I have any knowledge of, except the Clinton.

But, after all the drawbacks, South-eastern Iowa is now producing an abundance of fruits. For several years, apples, pears, cherries and grapes, and those of the finest quality produced anywhere in the Union, have been abundant here, and they bid fair to continue to be so. Of course, our list of varieties of some kinds of fruit must be more limited than further South.

[Very interesting notes. We should be glad to have similar sketches from others of our Western friends.—ED. G. M.]

THE PEACH TREE BORER.

BY WALTER ELDER.

I have succeeded the past four years in preventing the *Borer* from injuring the stems of my peach trees, simply by digging small circles around the trees, and setting tomato plants close to the stems in May, sometimes one plant to a tree, and sometimes two plants to a tree; and, as they grew, they were tied to the stems eighteen inches high, and then left to themselves. They soon encompassed the stems, and the borer did not attack them, but took to the branches high up. The gum soon oozed out at the incisions made in depositing the eggs, and the grubs were destroyed in their infancy, and, if they had been left alone, they would only have injured some of the branches; whereas, if they had been in the stems, they would have killed the trees entirely.

I got two peach-growers in New Jersey to try the experiment, and they, too, have been successful the past two years. Not a stem has been attacked where the tomatoes were set. The tomato plants yield a good crop of ripe fruit in fall, about the time the late peaches come in, and, where grown extensively, both fruits are marketed at the same time. Every winter I have a half bushel of rotted manure spread around each tree, to replenish the soil for what the tomatoes took from it, and all the trees have kept very thrifty.

When I first tried the experiment, I thought that the odor of the tomato plants would be so offensive to the borer, as to make it keep off, and so it has proved. The thing is so simple, and tomato plants so plenty, that any body can try it, and it will speak for itself. All our seedsmen and nurserymen sell tomato plants for two cents each, and that, with the labor, will not cost over five cents for each tree, and the ripe fruit of each plant will bring fifty cents. So the experiment is a profitable one every way.

SCRAPS.

BY M.

Mr. Editor:—When a younger man, it was my habit, in the course of my reading, to make very brief notes as I read, merely with the object of looking over them a few times to fix the facts on my memory, and afterwards they were destroyed.

The following page turned up recently, having

escaped the general destruction, and, noting that it contains many facts in a brief space, I send it to you for your younger readers' benefit, if you think it of use to them. I do not remember now from what work the notes were made:

Abies orientalis. Loudon. Slender kind, like American White Spruce.

Picea religiosa. H. et B. Leaves like *A. Douglasii*, but the leaves glaucous beneath; cones like the Cedar of Lebanon, but larger. Used by the Mexicans for adorning their churches on saints' days. Mountains of Augauguco. Five to six feet in diameter, and fifteen feet high.

Picea pinsapo. Loudon. Variety of *Cephalonica*.

Thuja Wareana. Booth. Same as *Orientalis tartarica*.

Cupressus thurifera. Mexico. Fifty to sixty feet.

Juniperus taurica. A distinct variety of *J. oxycedrus*.

Juniperus squamosa. Palleck. Dwarf, trailing, robust species.

Juniperus dahurica. Same as *J. nana*.

Juniperus flaccida. Small tree. Fifteen to twenty feet; weeping branches; fruit as large as a hazel-nut.

The politicians, in the time of Elizabeth, fancied that the state would be ruined by Sir Hugh Middleton's plan of bringing water into our houses by pipes, instead of buckets.

A back-ground to shrubs ought to be composed of shrubs of dense opaque foliage, such as the oak, beech, or evergreen, and which have *descending* roots, that will not rob the shrubs.

Weeping Ash would look beautiful grafted with Persian Lilac.

Sida abutilon makes excellent hemp for ropes. Maceration of large stalks is effected in twelve days.

Ptelea trifoliata. Killed in hard winters in England.

Pursh lies buried in the suburbs of Montreal, without a monument or tablet.

CURCULIO REMEDY.

BY J. M. M., LEBANON, PA.

Take of refuse left in kettle after cutting out hard soap, 3 pecks; of air-slacked lime 1 peck; water sufficient to make a thick mixture; then to

one-third of this mixture add two-thirds soft water and syringe the trees. To be first applied about the stoning period, and repeated after each rain.

I have found the above *infallible* for a number of years. If you think it worth publishing, it is at your disposal.

WILD FLOWERS.

BY THOMAS GARDNER.

Trees, shrubbery and flowers: all know how to distinguish them, and all know their value and importance in the adornment of homes of taste, and in the numberless ways in which they minister to the pleasures and comforts of life.

This chapter treats only of flowers—wild flowers—flowers which every American may meet in some part of the United States, and which, by their beauty, would probably attract the attention of the most indifferent to floral charms.

"Wild flower" has not the same significance in our country that it has in most others. In that, for instance, from which we derive our language—England—native flowers and wild flowers have much the same meaning, very few being cultivated, except such as are imported from other countries, or, as we would say, "exotics." Her territory embracing no greater area than some of our medium-sized States, the most showy of the wild flowers become well known to the inhabitants, and thus seem too common for cultivation.

Our wild flowers do not seem common to us; our country is too large for this idea. The beautiful flowers of Texas or Arkansas are as really exotics to the inhabitants of Maine as the Fuchsia of Peru or the Victoria regia of Brazil; yet to a citizen of the United States they are "native plants"—wild flowers—of his country.

In a certain sense, all flowers are *wild flowers*. When we speak of domestic animals as distinguished from wild animals, we understand a species of changed nature which they assume by the taming process. The transfer of a wild rabbit to a cage would not cover our idea of domestication; though confined for a long term of years, it would be but a "wild" rabbit still. So most of the beautiful flowers that adorn our greenhouses and gardens are still but wild flowers, that have been culled from the broad field of nature's covering. Yet some flowers do undergo this taming process, and, as in the case of domestic animals when under skilful care and intelligent management, change their wild nature

and assume forms and characters unknown to them in a wild state. The Pansy, Geranium, Fuchsia, Carnation, Rose, amongst many others, are instances of this changed character, most of them, in a wild state, being very insignificant weeds, or, at most, not particularly attractive wild flowers. Also, as in animals, there are many that cannot be tamed, so amongst flowers; but very few can be brought thus to change their nature by any skill thus far brought to bear on them. The sweet Mignonette, well known to all for its delicious fragrance, is yet the same, in every respect, as those growing wild in the south of Europe, though it has been under culture for many generations; it is, in reality, the same wild flower.

The difference in the meaning of this term "wild," as relatively applied to plants or animals, is pointed out because great numbers suppose a cultivated plant to be an *improved* wild flower; and it is often expressed, as a matter of astonishment, that such or such a wild flower is not cultivated, "as it is quite as handsome as any in the gardens." This difference is also pointed out to show that some wild flowers can be "domesticated" in the sense in which animals are; and it is hoped that those who have not hitherto been much attracted to our wild flowers, and who, on a perusal of these pages, may be induced to take an interest in them, perhaps may notice in some one flower a disposition to vary that has not yet been known to show this character, and thus a new race of cultivated plants be added to our collections.

These flowers that have been found to vary and become improved by cultivation are called "florist's flowers." They are thus called because they owe their variations to the skill of florists, and not to the ordinary processes of nature. Some of our wild flowers have already been brought into this condition. The perennial Phlox is one of this class. There are about a dozen of different wild species growing in different parts of the United States, from Canada to Florida, along river banks or in swamps or wet places.

The French and Belgians, having noticed in them a tendency to vary, have applied to them their "florist's" skill, and have now many hundreds of different forms, many of them of great beauty, and all from twelve originals, so mean and uninviting in appearance, that probably not one in a hundred of those who read these papers ever knew a wild Phlox, or had his attention in any way called to it, common everywhere though wild Phloxes be. Our Mountain Laurels (*Rhododendrons*) afford another instance. We have but four

wild species—one of these, a little insignificant plant, growing on New England mountains, and another, a small bush, small-flowered, growing in Georgia. The other two are known, one as the Northern Mountain Laurel (*Rhododendron maximum*); the other as the Catawba Rose (*Rhododendron Catawbiense*). From these two, English cultivators have raised hundreds of most beautiful and magnificent varieties, which are at once the pride and glory of English gardens. They give a name to a class of plants which they distinguish particularly as "American plants," mostly composed of these improved *Rhododendrons*, and poor, indeed, is that garden considered which has not a portion laid off as the "American ground."

We will now turn to our "herbarium"—a collection of dried specimens of the plants of the United States east of the Mississippi, and point out to the friends who will go with us through the examination, those wild flowers that are particularly worthy of attention for their beauty or for some peculiar attractiveness.

The first collection comprises the *Ranunculus*, or butter-cup family, which embraces many very pretty varieties. The snow is scarcely gone ere the *Hepatica* is in flower in the woods through the whole, except a few of the most southern, of the United States. It has small, three-lobed leaves of a thick texture, from which it takes its name of "Liverwort"—*wort* being an old Saxon name for "plant." There are red, white and blue varieties, wild; and cultivation has produced double varieties of all these colors; then the "wind flowers," or *Anemones*—low-growing plants, which are well known by their leaves being borne on a single stem, and the single flower again arising, as it were, out of the nest of leaves. There are many pretty species; one, the "Pasque Flower," (*A. Nuttalliana*), a large blue flower, is common in Illinois. The Carolina Wind Flower (*A. Caroliniana*) has a large, sweet-scented, rosy, white flower. The Wood Wind Flower (*A. nemorosa*) is the pretty white one, seen everywhere in spring, and the Rue-leaved Wind Flower, (*A. thalicteroides*), growing with and much resembling the last. The Larkspur (*Delphinium*) belongs to this same "butter-cup" family. We have four beautiful kinds, all with tallish stems, of blue flowers—one, the large blue, (*D. azureum*), growing in Wisconsin and southward; another, the tall Larkspur, (*D. exaltatum*), from the Middle States southwest; the greenish-white of North Carolina, (*D. virescens*), and the three-spurred (*D. tricornis*) of Pennsylvania and Ohio. The Black Snake

root (*cimicifuga*), is also a very pretty plant of this family. There are also *Aconites*, several species with blue flowers, resembling Monks' hoods; the yellow marsh Marigolds (*Calthas*) of the swamps; Columbines, of which one (*Aquilegia Canadensis*), with crimson and yellow blossoms, growing among rocks, is one of the prettiest of the spring-blooming flowers; the Clematis and Ranunculus, or true 'butter-cups,' all these embrace the most ornamental plants of the family.

The family of Berberries has some interesting individuals. Unlike some other natural divisions of the vegetable kingdom, they have little striking resemblance to one another. The May apple, for instance, belongs to this class, as does the red berried plant well known as Berberry. One of these plants is interesting, as having been named by a botanist in honor of President Jefferson, (*Jeffersonia diphylla*). It is commonly known as the 'twin-leaf,' has something of the appearance of the May apple, but not quite so coarse, and grows in the middle and southwestern States.

In a systematic arrangement of plants, several orders of aquatics come next. The yellow Pond Lily of the northern States is well known. In the streams of New Jersey and States north of it, the white Water Lily attracts by its odor and beauty during July and August. This is the *Nymphaea odorata* of botanists, or sweet-scented nymph, and is, by far, the most interesting of our wild flowers amongst aquatics.

Further south they increase in beauty. The *Victoria Regia*, of Brazil, is world renowned. Its flowers have measured twenty-two inches across, and the leaves six feet in diameter, when under cultivation in greenhouses in the north, and are often larger in its native river. The yellow Nelumbo (*Nelumbium luteum*) is an attractive curiosity, not so much for its beauty as for the interest attached to it as the only American representative of the sacred *Lotus* of the Egyptians.

The Pitcher plant family (*Sarracenias*) are very curious swamp plants: what would be the leaf stalks in other plants, are in this swollen out, so as to form large hollow pitcher-like vessels. The flowers in shape are somewhat like the yellow Pond Lily, not so large or showy. The purple one (*S. purpurea*) is the only northern species; the others, of various shades of yellow and purple, extend through the swamps of the Atlantic States to Florida.

[To be continued.]

The Gardener's Monthly.

PHILADELPHIA, JUNE, 1864

— All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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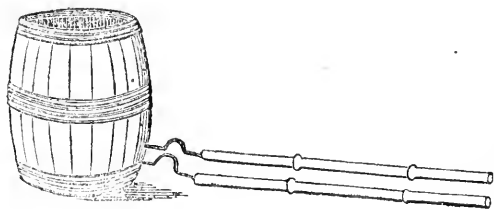
WARMING WATER FOR USE IN PLANT-HOUSES.

In one of our early volumes, we called attention to the absurdity of using water cold from the pump or hydrant, for watering plants in houses where it is necessary to have a high temperature. The sudden cooling of the temperature of the earth around the roots some 20° or 30° is very injurious, and a large amount of extra heat is required in such houses to supply the waste.

More recently, in erecting plant houses, as much attention is given to appliances for warming the water for watering as for heating the atmosphere of the building.

Last spring we saw a plan in use at Mr. Joseph Kift's the Florist, of West Chester, Pa., which was adopted to cause a better distribution of heat in the house, but which will serve a double purpose by furnishing warm water for use at the same time.

Every one knows that when houses are heated by flues, or in fact by any system, there is more heat than is wanted near the furnace. To carry off some of this surplus heat to the other end where it was more useful, Mr. Kift got a large oil barrel, fixed it under the stage at the opposite end of the house to the fire, and connected it by 3-inch pipe, with a small boiler fixed in the furnace. He has had the water to almost boil in the barrel, and by collecting so large a body of heat at the far end of the house has had his plants there as safe as at the furnace.



Mr. Kift was not without meeting difficulties. He found, for instance, that the iron pipes contracted and expanded to such an extent as to cause a continual leakage at the point of connection with the barrel. This he afterwards removed by substituting a short piece of lead, bent as in the engraving, which allowed for expansion without weakening the joints.

Mr. Kift's use of this arrangement was, we believe, simply to form a reservoir of heat; but there is no reason why it should not also be employed for the water heating purposes we refer to. A small pipe at the end near the boiler,—or near the point of supplying water to the barrel,—set so as to be higher than the barrel, would serve the purpose of a gauge to show the depth of water and also act as a safety valve, to guard against undue expansion of the water in the barrel. For our purpose, also, the barrel would have to be more elevated than in the case we refer to, so as to facilitate drawing off water as wanted.

We have not asked Mr. Kift's permission to make this public use of his plan; but we know him to be a very liberal minded gentleman, who is not afraid of a few of his 'secrets' becoming known to his neighbors, and have acted accordingly. That he is no loser by his course, is evident from the fact that he commenced business in West Chester but a few years ago with little capital but business tact, industry, and a thorough knowledge of his profession, and has already progressed to considerable eminence among the florists of the United States.

SCIENTIFIC AND INDUSTRIAL EXPLORATION IN EASTERN ASIA.

We are glad to perceive, by a Report of the Agricultural Committee of Congress, that there is some chance of a projected Commission to Eastern Asia being favorably reported on. The enterprise was started by Dr. D. J. MacGowan, of New York, and has for its object the exploration of that part of the globe with the object of introducing to this country a knowledge of the minerals, plants, and animals, arts and manufactures, that may possibly have an influence on the commercial or agricultural prosperity of our country.

From all we have learned, few persons in the country, perhaps, are better fitted to be the leading spirit in such an enterprise than Dr. MacGowan. He has already spent part of a life in similar enterprises in Asia, and has the reputation among scientific men of uniting a good scientific character with the happy faculty of making that knowledge practically useful.

The only only fear we have that Congress will fail to send out the Commission, arises from the fact that we cannot see how the act would have any bearing on party politics. When it was proposed to establish an Agricultural Department, it was evident that, in the language of the political 'ring,' 'it would be a big thing' with the farmers. They had an idea that the government should do something, somehow, some way for agriculture; but no one knew how or what. The politicians, however, knew how thankfully small favors would be received; and the last Report of our respected Commissioner Newton testifies to the joy which the little parcels of Peas and Pumpkins (chickens and pigs, paint, putty or glass for horticultural purposes, and other important items, we believe have not been distributed) have occasioned through the whole voting community.

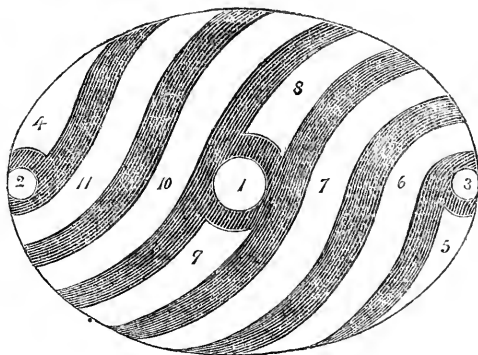
In the art of governing we have probably reached greater perfection than any people in the world; but our rulers are generally singularly deficient in any knowledge outside of that art. Senator Mason, of Virginia, had great reputation as a diplomatist, yet when a friend of ours pointed to a fine specimen of *Kolreuteria paniculata*, perhaps 30 years old, as a Japan tree, "Impossible," replied Mr. M., "how could you get trees from Japan before Commodore Perry went there?"

It was such influence in high places, no doubt, that wasted thousands in sending Fortune to China for Tea plants, when there were already hundreds of plants in the country; but even that expedition would never have been projected but for an immense political object at the end of it. Perhaps had Tea culture been found as practicable in North Carolina as these politicians hoped, that State might have fought as early and as heartily for the peculiar institution, as her sister Cotton-growing State.

We are all learning wisdom from the sad lessons of the past. War, it is hoped, will not much longer spread its dark clouds over us. Mere politics has received a severe check, and whether the projector of the present expedition, whom, as we have said, we know by reputation, leads it or not, it is to be hoped that science and the arts of peace will engage the serious study of those who are chosen to rule over us,—and that such expeditions as that now projected by Dr. MacGowan, receive all the attention their immense influence for good on the whole community eminently deserves.

PLAN FOR A ROSE BED.

Since the plan of pegging down Roses has become so deservedly popular, much enquiry is made respecting plans of beds suited to the purpose. Narrow beds are essential for roses,—and particularly so when the pegging-down system is employed. The following is a set of eleven beds, adapted to an oval outline.



Free-blooming roses, of course, must be employed for filling,—the Bengal and Bourbon Roses furnishing the best. For the beds in the plan given above, we would name:

- | | |
|-------------------|---------------------|
| 1 Hermosa, | 7 Agrippine, |
| 2 Bourbon Queen, | 8 Archduke Charles, |
| 3 Do. do. | 9 Do. do. |
| 4 George Peabody, | 10 Agrippine, |
| 5 Do. do. | 11 White Daily. |
| 6 White Daily, | |

Growing Roses in masses pegged down will be very popular on account of the permanency of the plants. Geraniums, Verbenas, etc., used in massing being annuals have to be replaced every year; but the Rose once set out, not only endures for years, but improves every year in beauty with its strength.

All the kinds named above will of course require a little protection in winter. The plants being pegged down as they grow, are easily covered with any light litter that may be at hand, and a very little will keep them securely.

Our engraver has attempted an improvement on the original idea; but as there are various tastes, we have decided to give it as he has figured it. Instead of the blunt ends to the beds, we would have them all taper to the oval outline, as the lower ends of the beds 5, 6, and 7 do.

The beds may be edged with box, and have gravel walks,—or the walks may be of closely mown grass.

STRAWBERRIES FOR THE GREAT SANITARY FAIR AT PHILADELPHIA.

The Committee on Fruits of the Great Central Fair of the Sanitary Commission, to be held in Philadelphia, commencing June 7th, 1864, propose to distribute a number of Silver Fruit Knives with appropriate inscriptions as mementoes of the occasion:

- 1st. The best 2 quarts of Strawberries of any kind on the 8th of June.
- 2d. The best 2 quarts of Hovey's Seedlings on the 9th of June.
- 3d. The largest quantity of any kind or kinds on the 10th of June.
- 4th. The greatest number of varieties, not less than 1 quart each, on the 11th of June.
- 5th. The best 2 quarts of Triomphe de Gand on the 13th of June.
- 6th. The largest quantity of any kind or kinds on the 14th of June.
- 7th. The best 2 quarts of Albany Seedlings on the 15th of June.
- 8th. The best one quart of any kind on the 16th of June.
- 9th. The greatest number of varieties, not less than one quart each, on the 17th of June.
- 10th. Best 2 qts. of any kind on the 18th of June.

As the chief object of the Committee is to induce large donations for the benefit of the Fair on each day, persons contributing can send as many more than the quantity called for as they can spare, and the Committee will select two quarts of the ones least damaged in transit as claimants for the memorial Knives.

It is to be hoped that the growers of the new varieties will be out in great force, and make the exhibition a credit to Strawberry growers, as well as profitable to the philanthropic objects of the fair.

Scraps and Queries.

☞ Communications for this department must reach the Editor on or before the 10th of the month.

☞ The Editor cannot answer letters for this department privately.

ROOT-GRAFTED APPLE TREES — CHENANGO STRAWBERRY APPLE—G. W. D., *Franklin Mills, O.*, writes:

"Your May number is a capital one, and altogether I consider the *Gardener's Monthly* the best publication of the kind in the country. But there is one thing due from it, I believe, which in justice

should appear: that is a fair unprejudiced article on the modern method of Root-grafting the Apple, given with a full understanding of the subject. It is very rare that an eastern man will talk candidly upon the subject. He has plenty of sneers, and offers them freely; and what real objections he pretends to have are based on mistaken notions. For instance, one writer says: "the pieces of roots gradually die;" and others talk as if old roots (side roots from old trees) were used, etc. I merely wish to call your attention to the subject, and its importance will not be questioned—for a vast majority of all the trees raised in the country are so propagated; and if there is a system in vogue that is sending out millions of bad trees annually, it should be stopped if possible.

I wish to say a word for the Chenango Strawberry apple. It has fruited with me several years, and I have seen no commendation of the fruit that comes up to my estimation of it. I rank it 'best' in all respects; it needs to be thoroughly ripened on the tree to attain its finest condition, and then I know of no equal to it. The American Summer Pearmain or Early Joe may be richer, and please some palates better; but not mine; and I have seen no one that has eaten it in its best state, that has not pronounced it best. It is an annual bearer, and the fruit is very beautiful."

[Root-grafted apple trees are as good as trees grafted or budded on seedling stocks. The objection to them is more hypothetical than to be discovered in practice.

After some years of observation of trees raised both ways, we find the following facts:

First. As a rule, root-grafted trees come into bearing abundantly earlier than budded trees, and do not live quite so long; but the difference is very little, and on this head we should give the preference to root-grafted trees.

Second. The roots of root-grafted trees never extend so far as trees otherwise raised; but they are much more fibrous, and furnish quite as much food to the tree as the others. The tree is not therefore injured in its growth by this mode of propagation; but is more liable to lean over in heavy rain and wind storms, than trees with long main roots. This is a point against root grafting.

Third. The fibrous nature of the roots favor successful transplanting. All other circumstances being equal, there will be fewer deaths among transplanted root-grafts than budded trees.

Fourth. Root-grafted trees during the first few years of their existence are hardier than budded ones. Whenever the thermometer goes below zero,

the very vigorous shoots on strong budded stocks will often split, when root-grafted ones of the same variety, side by side, being less vigorous escape.

The chief objections to root-grafting, we think, have arisen from mistaken individuals who seem to consider nurserymen as the most dishonorable men out of jail. We have often heard it said that "nurserymen praise root-grafted apples merely because it is convenient for them to do it in winter, when they have little work for their men." The writer is ever indifferent to what motives may be imputed to him in his business transactions; but it so happens, that while giving his good opinion of root-grafting apples, he buds most of his own,—the nature of his business furnishing full employment for his hands at other work through the winter season.

We have before spoken highly of the Chenango Strawberry apple.

GREENHOUSE PLANTS—*W. M. D., Pittsburgh, Pa.*—I have a number of well-grown plants of *Bletia Tankervilleæ*, which I purchased five years ago. They seem healthy and vigorous, but will not bloom. Can you suggest a reason? (1)

Also, *Poinsettia pulcherrima*—one winter the plants were all that could be desired, magnificent above all others in the hot-house. I have followed Mr. Buist's directions closely for three years past, but the scarlet bractæ are very small. (2)

How can the earthenware or brick tile flue pipe be cleansed; and would it answer for our soft coal? (3)

[1. Give it plenty of pot room through winter. In spring partially plunge the pot out of doors, in a moderately shaded place; put it next winter in a heat of 70° or 80°, and it will flower. Gardeners flower it by their regular ways; we recommend this for its ease in desperate cases.

2. Put this out the same way, only in the full sun. Pinch it back occasionally to make it as bushy as possible; next winter give it a heat of 60°, and it will flower profusely.

3. Most people take out the end piece. We use movable collars for securing joints instead of phlanges in the usual way,—having two or three in a space of fifty or sixty feet. These thin bands are liable to crack during the putting together while plugging in the joint clay, by so much pressure. We guard against this by putting a band of wire round before commencing, also where there may be any possibility of any pipe cracking. We should suppose with bituminous coal you would require to clean an 8-inch flue every other year.]

BOOKS—*J. C. W., Fishkill Landing, N. Y.*—I want to get a book that will give correct directions for the management of Stove, Garden and Greenhouse flowers, bulbs, tubers, etc. Is the work by Edward S. Rand the book I want; if not, what one would you recommend? I also want a good Botanical Dictionary, can you recommend one?

Please answer my inquiries through the *Monthly*, [Mr. Rand's book is mainly for 'Parlor Gardening.' There is no work exactly suited to your wants. 'Buist's Flower-Garden Directory' is the nearest. 'Paxton's Botanical Dictionary' is in general use among gardeners.

NAME OF STRAWBERRY.—*P. New York*, writes: "I obtained this Strawberry as 'Abingdon Blush,' and was led to suppose, by others since, that it was the same as 'Lennig's White;' but my plants are pistillate. Have I got it correct?"

['Abingdon Blush' is not the same as 'Lennig's White.' With regard to the flowers, it is one of the varieties that are more than usually changeable. Pure pistillate and well developed hermaphrodites are abundant, often on the same plant.]

PUMPS—*J. M., Lebanon, Pa.*—My cistern is about 45 feet distant from my well; the latter being about 35 feet deep. I want a pump that I can place near the one in cistern and draw the water from the well. Can you recommend one that will answer my purpose, and price of same?

[There are several different kinds which might suit your purpose. We will hand your address to the makers, who will answer your inquiries.]

NAME OF PLANTS—*S. B., Christiana, Pa.*—1. *Cotyledon* sp. 2. Double Red Campion; *Lychnis diurna*. 3. *Lamium rugosum*.

ASCENT OF THE SAP—*A. L. S., Parkersburg, Va.*—"Perhaps you may not think the following query of any practical value, but more than I think it curious, and would be glad of your explanation through the *Monthly* :

"A large trunk of Willow, cut down last winter, has shoots now, on the top of a wood pile, six inches long; where does the sap come from to supply the shoots? Pear branches, cut down at the same time, along side of these, have no shoots."

[Willow-wood contains a great deal of watery sap. The shoots feed on it. When the supply is exhausted the shoots will die. Hard, close wood, like the Pear, has not enough sap to support shoots. When the moisture is dried out of the willow the pear-wood will be the heaviest.]

Books, Catalogues, &c.

TEN ACRES ENOUGH: A Practical Treatise for the Million. Showing how a very small farm may be made to keep a very large family. New York: James Miller.

The name of the author of this little book is not given; and for the best of possible reasons: the whole thing is a fiction, which has been brought to look like truth. It is doubtless the work of a clever lawyer, who is interested in the sale of Jersey lands. If merely employed in the capacity of an attorney for some land company, we are pleased to say he has served his clients well, for we never read a better made out case. Every thing that is recorded as having been done, might have been accomplished; for such results have been, and are being obtained from ten acres, and less, every day. The following abstract, however, of the book will give an idea of what the writer calls his experience.:

For forty years he lived in Philadelphia. Commencing life without a dollar, by dint of close application to business, and by avoiding taverns and oyster-houses, theatres and fashionable tailors, he managed to save a few hundred dollars, married and went into business. In this he was moderately successful. The crisis of 1837, however, nearly ruined him, but he kept struggling along through the next five succeeding years of hard times.

At length he determined to leave the city, and turn his attention to farming. He sold his business, and after paying all his debts had \$2,000 left. He purchased a small place in New Jersey, of eleven acres, for \$1,000, and bid adieu to the city. One acre was in clover, and another was occupied with the house and garden. This left him nine acres for general fruit and vegetable culture. He hired it plowed and subsoiled, going down twenty inches. He thinks if he could have plowed two feet deep it would have been all the better! He laid out \$200 in the purchase of well-rotted barnyard manure, and put it on the nine acres. He then set out six acres of peach trees, eighteen feet apart each way, or 134 to the acre. These would not be in the way of other crops, and in three years would be likely to yield a good return.

He has a relative in Ohio who has a peach orchard of eleven acres, which has yielded him \$5,000, in a single season, while peaches were selling in Cincinnati at 25 cents a bushel. He did not, however, sell his for that price. He received \$2 a bushel more readily than his neighbors got 25 cents for

the same variety of peaches. This result was accomplished by thinning the fruit. He determined to adopt the same practice on the old trees which he found on the place. When the young peaches were as large as hickory nuts he began the operation of removing all the smallest, and of thinning out unsparingly wherever they were excessively crowded. Five were thinned, and five left untouched. The result was that the peaches on the five denuded trees grew vastly larger and finer than those on the other five. The peaches from those five trees were sent to market and netted \$41, while the fruit from the other five netted only \$17, and those used in the family, from the same trees, estimated at the same rates were worth \$9, making on those five a difference of \$15 in favor of the thinning.

One of the most interesting chapters in the work is his account of his war with the weeds. The quick warm soil of New Jersey is particularly infested with them. In June he found every inch of his plowed land in a fair way of being smothered by them.

He fought the weeds the whole season, and did not allow a single one to go to seed. The next year he found his land quite clean.

Every thing that he had planted grew with surprising luxuriance. It was an illustration of the value of thorough culture.

His profits the first year amounted to \$336, derived principally from the sale of Lawton blackberry plants, which he happened to have. The next year showed a better result—the profits amounting to \$1,025. His most profitable crop was his six acres of strawberries, planted among his peach trees. He got 5,360 quarts, averaging 16 cents per quart net, or \$857.60 for the whole.

He had never done better than this in the city, and had never been so happy in his life. The third year his receipts were \$2,133 08. Expenses \$806 06—leaving a net profit of \$1,327 02. This is a profit of nearly \$130 per acre. The ground was crowded to its utmost capacity, and cultivated with unflagging industry and care.

He closes with a chapter recommending the thorough cultivation of a few acres at the East, rather than the indifferent cultivation of a large area at the West.

This is the sum of the history, and is as natural as if it really had happened. The book will become, indeed is already, very popular, and Jersey lands will bring good prices for the next year or two. We do not object to this result. If thousands who now over-crowd the usual walks of busi-

ness and trade, would settle on the land, either in New Jersey or elsewhere, it would be better for most of them, and for the country. The majority would not find 'ten acres enough,' and many more would find it entirely 'too much,' for a good while after their first settlement; but in the end they would be more independent and happy.

But the men who try every other business and fail, are not the men whom we wish particularly to see settle on the land. We prefer a more enterprising and energetic race. These, however, are the men who usually buy poor lands; and these this book is particularly adapted to catch. It was not the 'ten acres' that made so fair a show on the balance sheet, but an excellent business tact and shrewdness, which will make a man succeed in any business he understands; and we are quite sure that he who could make such an exhibit from ten acres in so short a time, would not be the man who struggled for forty years in city business, only to have \$2000 to show in the end.

As we have before said, the more knowledge skill and capital we can get on the soil the better for us all,—without these, we fear few would realize the picture portrayed in "Ten Acres Enough."

PROCEEDINGS OF THE MISSOURI STATE HORTICULTURAL SOCIETY FOR 1863—1864.

[Concluded from page 150.]

Thuja occidentalis (American Arborvitæ.)—The value of this tree, for our immediate locality, has been greatly over-estimated. It browns during the winter months, and is, in every respect inferior to the following, viz. :

Siberian Arborvitæ.—This tree bears the shears admirably, and in every other particular it is well adapted for a hedge plant.

Thuja aurea.—This new Golden Arborvitæ is the only one, that we are acquainted with, that retains its freshness unimpaired throughout the year. Plants of this tree are, unfortunately, scarce and dear. It may be easily grafted on other sorts as hereinafter described.

Thuja orientalis and *japonica*.—Are not desirable where either of the preceding kinds can be obtained.

Thuja filiformis.—A hardy weeping tree, quite dwarfish in habit. It attains to the height of five feet.

Taxus (the Yew.)—*T. baccata*, *T. hibernica*, *T. brevifolia*, *T. japonica*, *T. pendula*, *T. pyramidalis*, and *T. Canadensis*.

All the species, except the last named, are too tender for the Western climate. The *Canadensis*

grows freely in a mixture of top soil, leaf mould and decayed wood, and forms a low rambling head; and, when partly or wholly shaded, produces numerous berries of a bright red color.

Saxegotheca conspicua.—This tree, which has excited so much interest of late, is a native habitant of the elevated regions of Patagonia, growing near the line of snow. Small plants closely resemble the English Yew, except the under side of the leaves, which are of a light sea-green color. This, as well as the two following: *Fitzroya Patagonica* and *Libocedrus tetragona*, (both of which were found between the lower limits of winter and perpetual snow lines,) will fail in this climate for want of the proper degree of humidity in the atmosphere.

Rhododendrons.—Some thirty-eight varieties, embracing most of the new sorts from Asia, were tried. Beds for their reception were prepared in a shaded situation, over a deep loose, loamy soil, out of decayed leaves, wood and top soil. The plants were then planted and carefully mulched, with half decayed leaves and decayed wood, to the depth of five inches. All of the plants grew finely, and on many of them the blossoms were truly magnificent. As early as the latter part of June following, a slight mouldiness was perceptible on the new leaves, which gradually extended to all parts of the plants. From the first appearance of the mildew until the end of the season, the leaves were constantly dropping and new ones forming. The new leaves seldom grew to half the size of their predecessors, before they in turn were forced to give place to much smaller ones; when, at the end of the second season, all were destitute of foliage, except one variety, the *R. ciliatum*, which, since then, has gone the way of its predecessors.

Cerasus lusitanica (the Portugal Laurel.)—This shrub is unsuited to our locality; the leaves are injured by sun-light, and are killed outright early in the winter.

Arbutus unedo (the Strawberry Tree.)—This shrub is a native of Ireland and the Cape of Good Hope, and in Europe it is an evergreen tree or shrub; here it is of slow growth, and parts with its leaves early in autumn. Its fruit, in size, shape, and color, is that of a small strawberry, which matures from June to November.

Berberis (the Berberry.)—Several of the European sorts part with their foliage, which greatly retards their growth.

Mahonia aquifolia.—Is one of the hardy evergreens; flowers yellow and fragrant; berries purple, and ripe in August.

Cotoneaster buxifolia, *C. marginata*, *C. micro-*

phylla, and *C. thymifolia*;—Two hours of our bright winter sun-light, I believe, would suffice to kill them.

Buxus (the Box) *elata*.—New gold-edged, silver-striped, thyme-leaved, and dwarf. All these much neglected shrubs, so desirable for edging or planting out singly in the shade of trees, will be found to be hardy with a little shade during the winter months.

Thea viridis and *bohea* (the Chinese Tea Plant.)—The Agricultural Department at Washington are distributing gratuitous tea plants to those who apply for them. In 1855 I imported plants from England, which were carefully planted and cultivated. In the fall they were deeply covered with the boughs of evergreen trees; but, notwithstanding the protection they received, they were all killed during the winter months.

Sequoia gigantea.—Two plants of this species were planted out in March, 1857. They were kept well shaded by planting evergreen boughs near them. From seven o'clock, A.M., to six P.M., of each day until July following, when the shade was withdrawn from one of them for one day; three days later, the branches and leaves of the one exposed were found to be wilted and dead; the remaining plant, protected as described from the mid-day sun, grew with great vigor, but after the first hard frost of autumn it was found to be dead quite down to the ground. It may not be amiss to remark that the plants referred to were one year old. From the seed grown under glass, older plants might have fared different.

Cryptomeria japonica.—Hundreds of these trees have, within the past fifteen years been planted in the vicinity of Alton, Ills., and one single specimen planted by myself in 1855, in the deep shade of evergreen trees, entirely protected from the sun, has, like a messenger of Job's, "alone, escaped alone," as a reminder of departed hopes.

Grafting.—The style of grafting which you desired me to explain was first described by Mr. L. M. Dunlap, before the Illinois Horticultural Society, at the time of its organization, and was by him considered applicable only to young cherry stocks. Experience has since that time demonstrated its value for both evergreen and deciduous stocks and roots, and has also been successfully executed on perennial and annual plants. The operation may be performed by selecting a graft of the exact size of the root, stock, or branch to be grafted; cut the top of the stock, root or branch in the shape of a wedge; the sloping cut should be about one-and-a-half inches long; next split the end of

the scion, and thin away each half to correspond with the slope on the stock; put the two together, and with a strong linen thread, well waxed, bind them together as firmly as possible without imbedding the string in the bark. This ligature must be applied spirally, leaving about one-twentieth of an inch between each turn, and continue spiral binding as described, until the stock and graft are brought firmly together; then, with a brush, apply a thin coating of warm grafting wax. If too much wax has not been used, you can easily see any change that may take place under it. In from one to four weeks you will find that from the connecting edges of the graft and stock, that new wood will have made its appearance. This new growth closely resembles the callus which protrudes from the base of cuttings, and will, in a short time, knit the stock and graft firmly together, when the ligature should be cut.

In grafting on pieces of root, wax the thread with shoemaker's wax and cover with one thickness of cloth, or paper, dipped in grafting wax; this covering, together with the waxed thread, being placed below ground, will decay away in time to avoid injury.

The superiority of this mode of grafting consists in bringing the connecting edges to be united firmly together, and holding them there without strangling, which would occur were the pressure applied to the whole surface as in the ordinary way.

New or Rare Plants.

The *Botanical Magazine* figures the following:

THE CANNIBAL'S TOMATO (*Solanum anthropophagorum*).—The 'Correspondence relative to the Fiji Islands,' presented to both Houses of Parliament, by command of her Majesty, in May, 1862, is accompanied by an interesting Appendix, being a report by Dr. Seeman, on the 'Vegetable Productions and Resources of the Vitian or Fijian Islands,' in which a chapter, at page 58, is devoted to 'Vegetables eaten with human flesh;' from which I make the following extract:—"These it may be important to notice; since, thanks to the influence of commerce, Christian teaching, and the presence of a British Consul, cannibalism survives only in a few localities, and is daily becoming more and more a matter of history. Human flesh, Fijians have repeatedly assured me, is extremely difficult to digest, and even the healthiest suffer for

two or three days after partaking of it. Probably, in order to assist the process of digestion, bokola, as dead man's flesh is technically termed, is always eaten with the addition of vegetables. They are principally three kinds, which in Fijian estimation ought to accompany bokola,—the leaves of Malawari: (*Trophis anthrophagorum*, Seem.), the Tudano (*Omalanthus pedicellatus*, Benth.), and the Boro dina (*Solanum anthrophagorum*, Seem.). The two former are middle-sized trees, growing wild in many parts of the group, but the Boro dina is cultivated, and there are generally several large bushes near every 'bure' (or stranger's house), where the bodies of those slain in battle are always taken. The Boro dina is a bushy shrub, seldom higher than six feet, with a dark glossy foliage, and berries of the shape and color of Tomatoes. This fruit has a faint aromatic smell, and is occasionally prepared like tomato sauce. The leaves of these three plants are wrapped round the bokola, as those of the Taro are around pork, and baked with it on heated stones. Salt is not forgotten. Whilst every other kind of vegetable and meat are eaten with the fingers, cannibal food is touched only with forks, generally made of the wood of the Nokonoko (*Casuarina equisetifolia*), or the Vesi (*Azelia bijuga*, A. Gray), bearing curious names, and having three to four long prongs. The reason given for this deviation from the general mode of eating, is a wide-spread belief that fingers which have touched bokola are liable to generate cutaneous diseases when coming in contact with the tender skin of children; and as the Fijians are very fond of their offspring, they are most scrupulous in using forks on the above occasions."

The Boro dina above mentioned is the subject of some interest. The plants were reared from seed brought home by Dr. Seeman, and which flowered in the stove of the Royal Garden in July. Except when in fruit, this species of *Solanum* has no beauty to recommend it for cultivation; it is only interesting historically, as connected with a practice which is happily yearly becoming more and more obsolete. *t.* 5424.

CEREUS PTEROGONUS (Wing-angled Cereus).—Native of Carthagera, South America. Flowers white, blooming in August. *t.* 5360.

PHÆDRANASSA OBTUSA (Blunt Phædranassa).—Called also *Phycelia obtusa*. Native of Pichinca Mountain, near Quito, more than 10,000 feet high. Flowers scarlet, tipped with greenish-yellow. Blooming in winter. *t.* 5361.

CYPRIPEDIUM HOOKERÆ (Lady Hooker's Cy-

ripedium).—Imported by Messrs. Low & Sons, Clapton Nursery, from Borneo. Leaves variegated, dark green, with pale mottling. Flowers variously marked with yellow and purple on a pale green ground. *t.* 5362.

PLUMBAGO ROSEA var. COCCINEA (Scarlet Red Leadwort).—It has also been called *Thalia coccinea*. Messrs. Veitch & Sons, Exeter and Chelsea Nurseries, received seeds of it from the Neilgherry Hills. Flowers brick red, in panicles. *t.* 5363.

CÆLOGYNE LAGENARIA (Flasked-shaped Cælogyne).—Native of the Himalaya; flowers white, lip blotched with crimson, but the leaves do not appear at the time of the flowers. It was bloomed at Messrs. Jackson's Nursery, at Kingston-on-Thames. *t.* 5370.

ENCEPHALARTUS HORRIDUS var. TRISPINOSA (Three-toothed).—A native of the Cape of Good Hope, and has also been known under the name of *Zamia horrida*. *t.* 5371.

CODONOPSIS CORDATA (Heart-leaved Codonopsis).—Native of Java, in moist woods on the mountains, at elevations between 3,500 and 8,000 feet. It is a gracefully-climbing plant, with pale green flowers. *t.* 5372.

CYRTANTHUS LUTESCENS (Yellow-flowered).—A Cape bulb with graceful and very fragrant flowers, which are produced in February in a warm greenhouse. Introduced by W. W. Saunders, Esq., *t.* 5374.

GLOXINIA MACULATA.—This was introduced into England in 1730, by Robert Millar, who sent some seeds from Carthagera, in South America; and although it is a plant of unquestionable beauty, yet it is almost impossible to meet with it in any collection. The whole plant is covered with very fine whitish hairs, and the corolla is of delicate lilac color.

PHALÆNOPSIS INTERMEDIA var. PORTEL.—The flower of this variety resembles a small flower of *Phalænopsis Apridite* (*amabilis*, Lindl.); it is of a snowy whiteness, with a purple lip, the centre of which is yellow, as well as the callosity, which is marked by blackish purple spots; the lateral sepals and petals are from spots at their base. M. Marius Porte found but one single specimen of this plant during his long stay at the Philippines. Neither does he appear to have found more than one plant of *Phalænopsis intermedia*, Lindl. (*Lobbii*, Hort.), which appears to accord with M. Reichenbach's statement, that there it is a hybrid, the issue of

Phalænopsis Aphrodite and equestris, Rehb. (rosea, Lindl.). It ought, therefore, according to the rules adopted for naming hybrids, to be called Phalænopsis Aphroditi-equestris. The only plant that is known of this remarkable variety or hybrid belongs to Mr. Robert Warner, of Broomfield, a distinguished amateur, in whose house there is a plant of Phalænopsis Schilleriana, which has lately produced 80 flowers.—*Journal de la Société Imp. et Centr. d'Horticulture.*

New and Rare Fruits.

NEW FOREIGN GRAPE.—*The Duchess of Bupleugh Grape.*—Being at Dalkeith a few days ago, and having an hour to spare, I embraced the opportunity of calling at the Palace Gardens there. I was fortunate in finding Mr. Thomson at home, and still more so by seeing this new variety of Grape in an early stage of growth. I was shown into a lean-to house, where there are a number of plants of it fruiting in pots. There are also some Black Hamburghs in the same house, but entirely eclipsed by the Duchess. On entering the house, I was truly delighted, nay, astonished, by the profusion of bunches showing upon these young vines. The rods are about 8 feet long, good stout vines, though not extra strong, they having been grown under the shade of vines last year, consequently not so well matured as they would have been under more favorable circumstances; nevertheless, many of the shoots are showing large bunches at the third and on to the fifth leaf, proving to a certainty its free-bearing character as an early Grape. I had the curiosity to measure some of the bunches, which, though not yet in flower, measured 14 inches in length exclusive of the stalk; bunches tapering, lightly shouldered. Some idea may be formed as to what they will be when fully grown, and this, be it recollected, from pot vines, and started on the 1st of January last. I had also the pleasure of seeing it in another house a stage later, but here they are planted out. The bunches were just showing, and the buds had the appearance of being literally packed with bunches, indicating still more fully the free-bearing character of this new Grape. The flavor partakes of that fine grape Chasselas Musqué, which is the parent crossed with Muscat, but free from the cracking nature of that variety. It was exhibited last year at Kelso, where it carried off the first prize for the best-flavored Grape from all comers.

I would thus early in the season draw attention to this new grape, that one and all may observe and judge for themselves, as I understand it is to be sent out in the autumn of the present year; and amongst the many new grapes of recent introduction, I am convinced the Duchess will secure a place in the foremost rank.—A. ANDERSON, in *London Cottage Gardener.*

Obituary.

DR. EVAN PUGH, President of the Pennsylvania State Agricultural College, died on the 30th of April, at Bellefonte, near the College, after a short illness, in, we believe, the 45th year of his age.

We never had the pleasure of his personal acquaintance, but the *Gardener's Monthly* found in him an early friend, and some of the best articles in the journal were from his pen.

The following sketch from the *Country Gentleman*, we reprint, as showing our own appreciation of this excellent man:

"Dr. Pugh was devoted, most earnestly, to the cause of Agricultural Education. We had long known him by correspondence, but only met him personally once—at Rothamsted, in 1859, where he was employed for some time in pursuing his chemical studies, and carrying on various important investigations, not only as assistant to Mr. Lawes and Dr. Gilbert, but also those instituted and conducted by himself. He was wholly a self-made man, having as a teacher at home economized sufficient to enable him to spend several years abroad in securing a thorough scientific education, both in Germany and England. His aim in this was mainly if not solely, to fit himself to carry on the work upon which he entered immediately on his return in 1860—the management of a high school or college for the education of farmers' sons. He was indefatigable and self-denying in study and effort; and had an unflinching confidence in the practicability of adapting such an institution to the wants of those for whose benefit it should be established, and whose progress in intelligence and skillful practice, it was the highest end of his life to promote.

He has been taken away just as success seemed dawning before him. His place, we might almost say, it will be impossible to fill. We had hoped that he might be an acknowledged leader (as indeed he was so far as he had gone) in solving the great problems of the course of instruction best suited to fit

our farmers for their pursuit, and of the widest and most effective application of science to the demands and duties of the practical cultivator. Cautious in his conclusions; earnest and painstaking in what ever he undertook; conscientiously fearful of wrong and antagonistic to deceit and humbug; possessing a mind marked by solidity of acquirement and soundness of judgment, rather than by peculiar brilliancy or specious polish; warmly interested in the branch of science, to secure the mastery of which he had exerted himself so long and zealously; qualified in a high degree for the control and instruction of the young; undaunted by the difficulties which try the faith and courage of many, his loss will be severely felt by the agricultural community."

Domestic Intelligence.

BEST TIME FOR GRAFTING.—Early grafting, if properly done, is much more effective than late operations. Grafts set late may take with great certainty, but they never make much growth during the first season. Time seems to be required, after the graft is set, for the broken and bruised cells on the walls of the wound to heal and unite so as to allow free passage for the circulation of sap. Some pear grafts which I set in February of last season, made a growth quite equal to the natural shoots on the other parts of the tree, and there was no trouble with sprouts or suckers, which in late grafting issue numerous and successively, owing, no doubt, to the difficulty above adverted to. For cherry, plum and the grapevine, early grafting is a *sine qua non*.

There is a risk in grafting early, arising from the long exposure of the scion to the effects of drying wind in March and April, which so parch and contract it as to close it against the flow of sap. This can be prevented by using short scions, and by coating the entire scion, or at least the lower buds, with a film of wax or varnish. Grape-grafts, or others near the ground can be covered with a little hay, straw or paper, to retain moderate moisture; and prevent ill effect from the contracting effects of frost and expansion by warmth which might either cause cracks in the coating of wax or displace the scions. Particular care must be taken that every part of the wound—even the slightest mark—is covered by wax to prevent evaporation. Whip-grafting is the easiest and neatest method. For early work, a temperature of 45°, with a little

or no wind, allows the operation to be performed with ease. Nothing but a small knife, and a roll of waxed strips wound on a bit of wood a little larger than a lead pencil, is required; and this roll can be carried in a pocket for warmth or suspended from a button. Only a single spiral wrapping should be given, and it will then unwrap itself without attention as growth progresses, and without checking or choking it.—W. G. WARING, Tyrone, Pa., in *Country Gentleman*.

THE ALLEN RASPBERRY.—I noticed that *Brinckle's Orange* raspberry was bearing heavily, and remarked that it and the *Purple Cane* and the *Black Cup* were the only varieties worth cultivating at Rockford.

"Strange, however, B.," said Dr. K., "that our family and our neighbors prefer the *Allen* to all others. Here it is, with a few of *Brinckle's* to fertilize it, bearing abundantly."

And we found it so; that the defence of the *Allen* made by Dr. K., at the meeting of the Illinois State Horticultural Society, last December, was well supported by the fine crop it was bearing when I visited Kenwood.—*Rural New-Yorker*.

HELIOTROPE FOR WINTER FLOWERING.—As a pot plant the *Heliotrope* is valuable, and with good management may be formed into handsome specimens. For this purpose young plants should be taken, and liberally shifted into thoroughly drained pots, and kept growing through the summer, but not allowed to bloom, the ends of the shoots being frequently pinched off to keep them dwarf and compact. The plants being thus made, they will flower in a warm, light, airy situation, freely all winter.—*Valley Farmer*.

ORCHARD MANAGEMENT BY DR. WARDER.—There are portions of the country where the growth of orchard trees is too rampant to permit an early productiveness of the trees; this early bearing is a great desideratum in a new country, and with an impatient orchardist: as a mere matter of financial calculation it is also a question of some moment. As a general rule, the more thorough the culture of the young trees, the more rapidly they are developed to their full extent, the more satisfactory will be the ultimate result in large crops of fine fruit; while all plans that force the trees into a premature fruitage, must have a tendency to produce early decrepitude.

But the encouragement of wood growth must not be continued too long, since it is the antagonist of

fruitage; it must be subdued and brought within certain limits to insure abundant crops, though it should never be altogether suspended, the growth of the tree should continue with the production of fruit. In some soils it has been necessary to curb the excessive production of wood, by discontinuing the cultivation of the soil, and laying down with blue grass, which makes a close sod, and thus checks the growth of the trees, forcing them into a fruiting condition. Every orchardist must decide for himself, whether the orchard of larger trees, capable of bearing larger crops at a later period of their existence, is to be preferred to that containing smaller trees bearing a crop within a few years from planting, and continuing to be productive for a considerable period, even though the trees should never attain the large size that is so much admired, nor continue to be productive so long as the other.

A NEW HORTICULTURAL HALL.—The new building to be erected for the Massachusetts Horticultural Society, on the site of the Montgomery House, will be one of those structures that cannot fail of being hereafter regarded with pride by Bostonians. The exterior will be more elaborately and richly ornamented than any other public edifice in the city. An examination of the designs, drawn by G. J. F. Bryant and Arthur Gillman, reveals a beauty of conception, and a magnificence of detail not surpassed in any building now standing in the city. The front and two sides will be in the modern French style of architecture, the columns and projections being arranged so as to produce the most picturesque effect.

Emblematical and allegorical sculpture will enhance the splendid appearance of the front. Pomona, attended by the four infant seasons, is to crown the sky-line of the facade, while the frieze of the portico over the centre window will be adorned with Cupids, wreathing strings of flowers. This portion of the building will satisfy the demands of the most cultivated taste, and throughout the entire edifice the idea of beauty, as well as convenience, is carefully preserved, and exhibited in elegant and many varying forms.

A cellar story, partially finished into apartments as a basement, will include the whole area of the estate, and the land beneath the sidewalks of the streets. These apartments will all be employed.—The first or street story is to be so fitted as to be used for stores. One of the exhibition halls, the whole width of the estate, will be on the second story. In the same story, there will be four rooms to the west of the hall, two of which will be for the

Superintendent and Treasurer, and the other for a library. The several apartments of the second story will be amply lighted.

The third story will be mainly devoted, over its whole extent, to a principal exhibition hall, covering the length and breadth of the entire property, except a comparatively small space. This hall will have a gallery at one end, and be 50.6 by 77.9. Its height will be 27 feet. It is designed that five stores shall be made in the basement story, and an equal number in the first story. The hall in the second story will be 51 by 57 feet.

The building committee of the Horticultural Society, which consists of the President of the Society and eight of its principal members, have devoted a very large share of their time for the last six months to the consummation of this project, and have closed all the contracts required to build the structure within the sum placed at their disposal by the vote of the organization. The removal of the building now occupying the site of the intended edifice, will be begun on 'May morning,' and it is confidently believed the latter will be ready for occupancy as early as May 1, 1865.—*Boston Cult.*

MUSEUM OF NATURAL HISTORY AT CHARLESTON, S. CAROLINA, IN 1860.—The Museum of Natural History at the College surprised me; the collection is the best in the United States, excepting that of the Academy of Natural Sciences at Philadelphia. The Smithsonian Institution has a larger collection than the one here, in some departments, especially in reptiles, and, perhaps, birds; but the museum here has certainly more mounted birds than the Smithsonian, and is more complete in the other branches of natural history. The Smithsonian has no herbarium, and here there are both Elliott's and Ravenell's, embracing most of the plants in the United States east of the Mississippi river. The 'Aquariums and Ferneries' here attract most attention, and do much good, for visitors on seeing them are delighted, and go away and get some for their own homes, and a good Aquarium and Fernery will make any home more pleasant. It will delight the children and please the old.—S. B. BUCKLEY.

THE WILLIAMS APPLE IN MASSACHUSETTS.—The 'Williams Apple' is probably the most popular market apple among the summer varieties, its size and magnificent color, when allowed to ripen on the tree, make it very saleable. It is not a high flavored fruit, and for quality would rank almost or quite second-rate. It requires peculiar cultiva-

tion, of which I will briefly speak. It should be left to ripen on the tree, or it will not color up well. It does not ripen all at once, but continues to ripen and drop for some two or three weeks.

A person intending to make this variety profitable should have several trees of it, say from five to twenty, which he should keep well trimmed and rather thin of wood; and which he should manure freely—don't be afraid to do that—then he should mulch the trees as far as the limbs extend, with meadow, or something of that sort, so that the apples as they drop, will not be bruised,—for the Williams should never be picked from the tree, but allowed to ripen and color up fully, and then drop, when they may be picked up daily and sent to market. The advantage of having several trees is that one or two days' picking will furnish enough to make it an object to send them to market. If treated as recommended above, they will be very fine, and will always command a ready sale with good prices; this year a high price. The best Williams apple tree I ever saw, and the one that produced the largest apples, stood right by a cow-yard and got the benefit of a pool of manure water.

No apple on the whole list will better pay for cultivation than the Williams, when properly grown. This variety took the first prize at the Horticultural Rooms this year, for summer apples.—*N. E. Farmer.*

OILING BOOTS.—The application of castor-oil to new boots renders them as soft as a buckskin glove. It is also the best application that can be made to render a new boot water-proof.

SUGAR TRADE WITH THE INDIANS.—It is now about the middle of June, and some fifty birchen canoes have just been launched upon the waters of Green Bay. They are occupied by the Ottawa sugar-makers, who have started upon a pilgrimage to Mackinaw. The distance is near two hundred miles, and as the canoes are heavily laden, not only with mocuicks of sugar, but with furs collected by the hunters during the past winter, and the Indians are travelling at their leisure; the party will probably reach their desired haven in the course of ten days. Well content with their accumulated treasures, both the women and the men are in a particularly happy mood, and many a wild song is heard to echo over the placid lake. As the evening approaches, day after day they seek some convenient landing-place, and pitching their wigwams on the beach, spend a goodly portion of the night carousing and telling stories around their camp

fires, resuming their voyage after a morning sleep, long after the sun has risen above the blue waters of the east. Another sunset hour, and the cavalcade of canoes is quietly gliding into the crescent bay of Mackinaw, and reaching a beautiful beach at the foot of a lofty bluff, the Indians again draw up their canoes, again erect their wigwams. And, as the Indian traders have assembled on the spot, the more improvident of the party immediately proceed to exhibit their sugar and furs, which are usually disposed of for flour and pork, blankets and knives, guns, ammunition, and a great variety of trinkets, long before the hour of midnight. In about a week after their arrival at Mackinaw, the Ottawa Indians begin to sigh for the freedom of the wilderness; and, before the trader has left his bed, some pleasant morning, there is nothing to be seen on the beach at Mackinaw but the smoking embers of a score or two of watch-fires.

STARTING DELAWARE GRAPE FROM CUTTINGS.—A. S. Moss wishes some one to give him the 'modus operandi' for starting Delaware cuttings in the open air. Two years ago I tried it, with partial success. Last season I saw a method by which almost every cutting was started. Cut your cuttings in November, so that they will not be injured by frost, and bury them till April. Now the trouble of the Delaware wood is its hardness to root. To overcome this, lay them in tiers with dirt between, having the bottom of the cuttings toward the sun, in some warm locality, and water them occasionally. In this way you will get the roots partially started before the buds. No fears need be entertained concerning the buds starting. As soon as the roots are fairly started, place them in beds, the cuttings having about two inches space between them, and water them faithfully. This is one of the difficulties of starting cuttings of any kind with most persons—they do not give them water enough. After the bud is fairly started, they should be shaded on the hottest days.—E. A. KING, in *Country Gent.*

Foreign Intelligence.

BOTTLING CHERRIES.—Those who try the following recipe, cannot fail to have delicious fruit for tarts through the winter:—To every pound of fruit add six ounces of powdered lump sugar. Fill the jars with fruit; shake in the sugar over; and tie each jar down with two bladders, as there is danger of one bursting during the boiling. Place the

jars in a boiler of cold water, and after the water has boiled let them remain three hours; take them out, and when cool put them in a dry place, where they will keep over a year. We have tried this recipe for several years and never found it fail.—*London Field*.

DOUBLE FLOWERS.—I confess myself to be entirely ignorant of the mode by which the old florists obtained double flowers, and I believe no one can now point out the real way. I look on the production of double flowers to be the end of a tether in one style of cultivating plants; and I hold it as a 'fact' of the want of decay in the art of cultivation, that when cultivation emerged from the rule of thumb, to assume the natural or scientific practice now so far on the march of progress, the change was inimical to the production of double-flowering seedlings; that, like the variegation of plants, about which we have been so long and so far out at sea, the cause of doubleness was not owing to the superior cultivation of the parents, but to a long course of very unnatural way of growing plants, so to speak. All these changes I hold to have been brought about under conditions which were not natural, or likely to bring out the vigor of the parents in a natural way. I hold, also, that there was nothing accidental in the cause why double flowers or variegated leaves have been, or still are produced; that the result was owing to a sure and certain law, which would be now just as sure and certain in its results, if we did but know it. And although I hold that opinions which are not backed by experiment are of little worth, I shall give my private opinion on how double flowers have been formerly obtained, without putting more stress on it than if I had never given the subject a thought.

It has often appeared to me, then, that the parent plants of double flowers have long been under a course of high cultivation wrongly applied, if you can understand how that can be; but I shall explain by a reference to what is now very common. A fruit tree is bought, and is cared for in the highest degree of cultivation, and the consequence is an immense deal of wood and very little fruit. The system is changed; lighter soil, less roots, and the lesser number of them more near to the surface—that causes a check, and fruit-buds come instead of wood ones. Then the high state of culture wrongly applied, which I assume did the same thing at the same time, stimulated the vital powers, and at the same time curbed that power unnaturally, and that brought about the derangement in the progeny which we see in double flowers.

And the practice was on this wise:—The composts were then of the most stimulating character, and the application of them was exactly the reverse of what is now practised. Neither pots nor borders were then much drained, and all the compost was sifted to the finest mould. Turn to that system, and in time it will do as formerly.—D. BEATON, in *Jour. Hort.*

ANACHARIS CANADENSIS.—This, called in England the American Water Weed, is giving our English friends much trouble. We were at one time disposed to believe they were mistaken in supposing it introduced from America, thinking it was a case of a plant long overlooked, as we frequently find plants, especially water plants, are. But the trouble they find with it, is at least new; and is circumstantial evidence that the plant has found a new and congenial home. It is another instance of what we have often urged, that the popular theory of plants being best adapted to the original places where found wild is a fallacy. With us the *Anacharis* is seldom more than a delicate and fragile water weed. In England they complain that it fills lakes and streams to such an extent as to make boat rowing nearly impossible. The *London Gardener's Chronicle* concludes an interesting article on the subject by assuring its readers that "there is no domestic danger comparable to that which must follow the stoppage of internal water motion."

STRAWBERRIES IN NEW ZEALAND.—Seeing in your Journal last received, the extraordinary weight of strawberries—namely, fourteen to the pound of 16 ounces,—I write to say that I have this season seen some here in New Zealand of ten, eleven, and twelve to the pound, produced in a bed of extreme prolificacy. The bed is fourteen yards square, and was planted in February, 1853; it is a stiff loam, well dressed with old manure from the cucumber frames, and was top-dressed in spring, about August. Gathering commenced on the 15th of October, and has continued from that time until now (January 12), averaging two gallons per day ever since. The plants have now thrown out a second set of blooms. The bed lies facing the west, with a slight inclination to the north, on a gentle rise. One Strawberry, gathered in my own garden yesterday, was 2 inches long, 1½ inch broad, and 1½ inch thick. The owner of the garden I have spoken of, is Mr. Mansell, and he has had many much larger strawberries than those I have described.—G. EDWARDS, in *Cottage Gardener*.

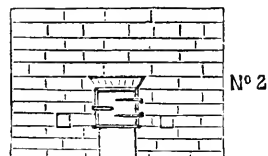
ECONOMIC HEATING.—The winter, now over I hope, has been perhaps, one of the most trying that we have had for several years past; for, although it has not at any time been very severe, the absence of any sun for such a length of time, with a thick heavy atmosphere, made firing both night and day a necessity, and no doubt, has caused many beside myself to study the economy of heating, particularly where fuel is expensive. I was led into considering, and also trying to make a practical use of the system I am about to explain, from the application of a friend whom I was particularly anxious to oblige. He was desirous of heating a greenhouse, and also to derive from the same fire by some contrivance sufficient heated air to supply a Turkish bath adjoining. This could only be accomplished by some modification of the Polmaise system, and knowing its successful working at Dropmore, I made application to Mr. Frost to allow me to take plans, which was not only readily granted, but Mr. Frost himself gave every explanation I could desire. These explanations, with the plans, I have much pleasure in placing at your disposal, if you consider them sufficiently interesting to the readers of your Journal.

It may be as well at once to state, that I feel convinced that it is utterly impossible to find any other system of heating more economical, and at the same time affording such a complete command of almost any amount of heat in the houses with a very small consumption of fuel.

One of the houses heated in this way is a large early vinery, the other a span-roofed plant-stove; they are both exactly on the same construction of flue, etc., and I have therefore sent a drawing of the stove, as likely to be the most useful.

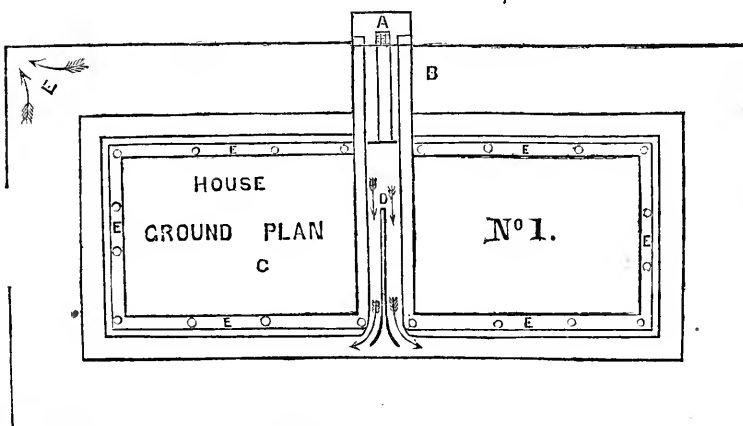
No. 1 that A is the fire-hole, the flue passing under the path B, and under the pit C, in the middle of which a division is introduced at D; one-half of the flue then goes one way, the other half taking the opposite way round, and both meeting at E, and dropping under the path, go outside into the chimney.

We will now commence again at A; and in the engraving No. 2, on each side of the furnace-door, is shown on



a level line with the grate a ventilator with either a slide or some other contrivance to shut or reduce the air to be admitted at pleasure. The fire-place is outside, and, therefore, the air passing in is always pure; but although there is all advantage in this instance, there is no reason why it should prevent others from adopting other methods of securing the air pure where it does not, as in this case, exist. For example, the air may be brought from the outside of a shed, the top of a house—in fact, from anywhere most convenient; the fire will soon draw it in very forcibly.

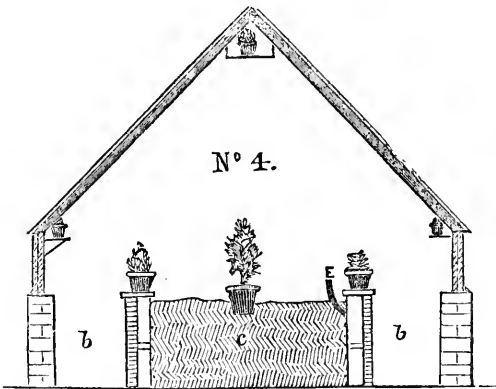
No. 3 is the flue going right across the house, underneath the bed, from which it will be seen that the flue E, except at the bottom, is wholly surrounded by the air admitted by the ventilator shown in No. 2. This air as it passes along, becomes thoroughly heated, and in this consists the economy. First, it will be readily admitted by any one who has put up flues, that to carry this across the house as shown, would, in any case, be the best way to make the flue draw, because when hampered with a rise near the fire all draught is stopped.



If this is admitted, we must also admit that all, or nearly so, of this heat is lost in the ground. Or suppose, for the sake of comparison, the flue to be raised to the level above the path *b* in plan No. 4, still the greatest amount of heat is buried underneath the path. All this heat is gathered up, so to speak, by the air that passes in round the path. Its effects I will explain

It will be seen by a reference to the ground plan | by-and-bye.

In the section of the house No. 4, it will be seen



that between the flue and the 4-inch wall of the plunging-pit is a cavity—this is still the air-flue,—and that *F*, in the plan No. 1, and this plan No. 4, are the same. They consist of one-and-a-half inch zinc pipes, and each are fitted at the top with plugs, which can be taken out or put in as required.

There is no doubt that many will say, that to admit this dry or hot air into the house will kill every thing. But no such effect is occasioned, although the air from the pipes nearest the hot part of the flue is, in very cold weather when the fire is driven on a little extra, sufficiently hot to scorch a tender leaf; but the latter must be directly over the pipes to suffer. The air is soon dispersed without any injury to the general plants in the house, which have all the healthy green appearance which the most fastidious could desire. They also consist of a sufficient variety to be a proof—Cucumbers, Pines, general stove plants, Dwarf Kidney Beans, Strawberries, small seedlings, etc.

Again: if the weather causes a brisk fire, the plugs nearest the fire may be left in, only taking those out where the air has further travelled; but this can scarcely occur, for the small amount of fire required makes the greatest caution necessary at all times to prevent the house becoming overheated. For example: if I do not mistake the date, on the 22nd of February, I found the thermometer outside at 12°, whilst, with a very small fire, the house was at 50°. Mr. Frost removed a few of the plugs, and in twenty minutes the house stood at 90°. The dry heat is also soon reduced by pouring water down one or two of the pipes.

Of course, this is Polmaise simplified; but I have no hesitation in saying that amateurs applying this system to their small houses would find that with a small fire and a shortened damper, the

bricks once warm would only require attention once in twenty-four hours, whatever severe weather might occur.

Again, for large orchard-houses, suppose we even say they enclose half an acre, if the tubes were carried up to the bottom of the rafters, the air rushing into this house would keep up a circulatory ventilation, and the amount of heat required in that air would be very small indeed to keep out any amount of frost.

Great care is necessary in making the fire part of the flue to prevent any smoke escaping into the air; also, as before mentioned, to make the dampers 2 or 3 inches shorter than the frame, so that the vent cannot at any time be entirely stopped.—*F.*, in *Cottage Gardener*.

PRUNING OF PYRAMIDAL PEACH TREES.—Some few years since, being much charmed with the idea of cultivating the Peach-tree as a pyramid I commenced that description of culture by having some trees potted. I am delighted with my perfect success in both modes of culture.

I found pinching in the young shoots of my pyramids in the first year of culture to answer perfectly. The second year it was equally so with the trees in pots—in short, it continues so with them to this day. This is the fifth year of their culture, and I can see no reason why it should not go on for many years, for no method can be more beautiful and satisfactory. With my pyramids planted in the borders of my orchard-house, I have had some little trouble, owing to their vigorous growth, (in spite of occasional root-pruning), and constant 'inclination of sap to the head.'

When pruning them to-day, I found their stems pretty well furnished with branches full of blossom-buds; but they are weakly and very unlike the crowns of the trees, which from being pinched-in all the summer, are masses of well-ripened, robust, blossom-bearing shoots, by far too much crowded. I have, therefore, felt called upon to perform some desperate amputations with my strong, sharp pruning-knife, done in this way: I have cut out the central or crown branches of every tree, so as to leave it with almost a flat head. This will tend to give the lower branches more strength, and the sun will have more access to the fruit. I have indeed reason to believe that with trees planted out in orchard-houses, either half-standards or standards, this open flat-headed style of pruning will be found the most eligible.

I have tried another way, besides summer-pinching, to restrain the too vigorous growth of Peach

trees planted out. This is described in the 'Orchard-House,' 11th edition, p. 82:—"In 1862, and again the past season, 1863, buds of some kinds of Peaches and Nectarines were much wanted for propagation. I therefore allowed some of the trees to make their first growth without being pinched. The shoots they made were most vigorous, many of them from 4 to 5 feet in length. About the middle of July these were all cut off to within 4 inches of their base. The trees were loaded with fruit, and I thought that this sudden decapitation would put the crop in peril, and cause it either to cease to grow or drop off in its then immature state. To my surprise, the fruit has grown to its full size, and ripened well. The decapitated shoots have put forth numerous young shoots, which this day (August 30) have been pinched to within 3 and 4 leaves of their base, and the trees look as they did last autumn—healthy, promising, and capable of bearing a good crop next year. I observe that their growth seems much more under control than those planted in the same border that have been under pinching all the summer." I have slightly deviated from this method, and have pinched all but 6 or 7 strong shoots, leaving them to grow without control. Their vigor is most remarkable, and they exhaust the tree of much superabundant sap. About the third week in July they are cut down to 5 or 6 inches; the buds at the base of each shoot break immediately, and form short spurs which ripen well during the autumn.

By this method, my planted out pyramidal Peaches and Nectarines have formed themselves into flat-headed half-standards, slightly feathered down their stems with branches rather weakly, still fruitful. These will in the end die off, and leave the trees half-standards, with open heads inclined to horizontal growth. As far as I can see, this is a most excellent mode of cultivating Peaches and Nectarines under glass. Among these trees, if there be sufficient room, trees in pots may be placed; and these, if pyramids, may be formed into perfect fruitful 'cordons' by summer pinching.

I have to add something rather curious, and which I confess is at present a mystery. In 1860 and '61 the fruit from the trees in pots in the same house was much superior in flavor to that from the trees in pots being in a warmer medium surrounded by the heated air of the house. In 1862 the fruit from the trees planted out was decidedly superior to that from the potted trees; but, to my surprise, in 1863, although we had a bright warm summer, it was just the reverse, for the fruit from the potted trees was infinitely richer than any gathered from

the trees growing in the borders, and I felt at a loss to account for it.—D., in *Jour. Horticulture*.

VALUE OF SCIENCE.—The generalizer in botany, zoology, or any other science which may rightly be denominated the science of observation, must rely for his generalities on the aggregation of results of innumerable individual observations. Thus it was once supposed that a certain moss, *Buxbaumia aphylla*, was destitute of leaves, and it might not have mattered whether it had leaves or not, except that there are physiological as well as technical reasons for concluding that a moss without leaves is an impossibility. It was Brown's good fortune to discover at the base of the footstalk true leaves like wisps of silk, and this observation tended to confirm and establish the law that all mosses have leaves, both of necessity and in fact. No observer can say what is the value of his observing; he may at the moment when he feels most deeply convinced he is but admiring or examining what has been admired or examined by every one of his predecessors, be actually taking note of something that was never observed before, and the result of his observations may in the end prove the untying of some gordian knot in classification, or the establishment of some principle of utility that may be of incalculable benefit to mankind at large. The great Linnæus, by simple observation of the habits of *Cantharis nivalis*, was enabled to point out to the Swedish government how to avoid the loss of many thousands of pounds every year, through the ravages of an insect which destroyed immense quantities of timber in the dockyards of that country. The remedy suggested by Linnæus was the immersion of the timber in water during the period when the fly lays its eggs, and this was found to be completely effectual in putting a stop to the ravages. The same master of the art of observing detailed the cause of a dreadful disease among the cattle of North Lapland, which was thought to be unaccountable and irremediable, but which Linnæus discovered to be owing to the prevalence of poisonous plants in the marshes where the cattle fed, and the eradication of these put a stop to the career of national calamity.—*Gardener's Weekly*.

DWARF APPLES FOR SUBURBAN GARDENS.—But very few occupiers of small gardens know with what facility apple trees may be cultivated even in the smallest plot of ground. A few instructions may not therefore be out of place. In nurseries apples are generally grafted on two kinds of stock—on the crab stock to form large standard trees for

orchards, and on a dwarf growing variety of apple called the Paradise apple, adapted for gardens; on this kind of stock apple-trees form small trees remarkably prolific. There are two forms under which they may be cultivated in gardens—as pyramids, or upright trees, like the Lombardy Poplar, and as bushes in the form of a gooseberry or currant bush. It is this latter form that we earnestly recommend to town gardeners, and we must urge upon them the necessity of buying trees that can be warranted to be grafted on the English Paradise stock. The very dwarf French Paradise stock is too delicate for our climate, for while they are young, none but an experienced fruit gardener can distinguish any difference in their growth, so that trees bought of persons without a reputation to lose may prove to be grafted on the crab stock, and wofully deceive the planter by their vigorous growth and unfruitful habit.

The rather modern practice of cultivating apples as bushes grafted on the Paradise stock will in time lead to a revolution in the culture of apples, for, instead of waiting from seven to ten years before a good crop can be gathered from a vigorous apple tree grafted on the crab stock, trees grafted on the Paradise will, if two or three years old when purchased, bear some fruit the first season after planting, so that a tree planted in December, January, or February, will gladden the heart of the planter by producing some fine fruit the following summer. Apples grown on dwarf trees are safe from violent winds, and are generally much finer than fruit from the earth.

These bush apple trees may be planted from 3 to 3½ feet apart, and the only pruning, or nearly so, they require is done in summer, after this fashion: In the month of June, as soon as the young shoots have grown to the length of 6 inches, 2 inches should be pinched or cut off from the end of each, and this must be done all through the summer till the end of August, or as long as the trees continue to make young shoots. In the course of three or four years they become compact, sturdy, fruitful bushes. At the end of that time, if they are too much crowded with shoots, some of them may be thinned out with a sharp knife in winter, when the leaves have fallen. If the culture of pyramids is preferred, the same system may be pursued, but the leading shoot must not be shortened till the end of summer, and then only to the length of 10 or 12 inches; on the whole, bush trees are best adapted for suburban gardens. If the soil the trees are planted in be too rich, so as to give over-luxuriant growth, they should at the end of two or three

years be taken up and replanted; this will give them a healthy check.

Apple trees in small town gardens are apt to be infested with the American blight, a sort of aphid, which makes its appearance in the shoots, and is covered with a white substance like floss silk; a certain cure for this is an infusion of 4 ounces of soft soap to a quart of warm soft water, applying it with a painter's brush.

The large quantity of useful apples that may be grown in a very small garden, by pursuing the method above described, is surprising.—*English Gardener's Almanack.*

Horticultural Notices.

DISCUSSIONAL MEETING, MAY 3RD, 1864.

THE CONSTRUCTION OF PLANT-HOUSES.

The Essayist appointed for the evening, Mr. William Saunders, presented no written essay, but offered a few verbal remarks on the leading points of the subject.

The first object to attain is plenty of light. The next is a low roof, as low as is consistent with architectural beauty. In high houses it is difficult to regulate the temperature and moisture. Ventilation should be ample. New views are prevailing on this point, and ventilation is more ample than formerly. Daily ventilation also is giving place to *seasonal*. Fixed roofs, with light rafters, are more economical than sliding sash with the heavy rafters they require. In glazing, no putty should be used on the outside, but the glass should be laid with the concave side outward, lapping about one-eighth of an inch, and bedded in putty or paint. I usually fasten the glass with pads, driving one at the lower edge, so as to prevent its slipping down. The lights should not be less than 10x12 inches: this size is preferable, both for light and resistance to hail storms, to a smaller size.

As to *form* of roof, the curvilinear is becoming quite prevalent. It should have considerable upright portion before the curve commences. For all practical purposes, the straight roof is fully equal to it and less expensive.

There should be a tank provided, of sufficient capacity to receive all the roof water.

There is no advantage in constructing a house partly below, and he would disapprove of it cardinally. Any gain of heat would be counterbalanced

by any excess of moisture. Is now building a lean-to house against a bank, with another section above to economize the heat, which, rising from the lower section, warms the upper one.

Has used the Aquaria Cement of Davis, New York, for glazing, but found no especial advantage in it.

Some houses have a large apparatus for heating water up to 160° for watering plants and vine borders; and the practise results favorably. The soil retains the heat a long while, especially if well drained.

An article was read by the Secretary from a daily paper on the influence of the moon upon vegetation; and a general conversation took place on the merits of different colors for the interior of plant-houses which our reporter, being called away at an early hour, was unable to take notes of.

MONTHLY DISPLAY, MAY 10TH, 1864.

In consequence of so few exhibitors attending strictly to the regulations of the society which asks that they hand to the Secretary a list of the *varieties* they exhibit, we cannot give as full reports of these interesting meetings as we would wish. It is of no interest to the community to know that A or B obtained the premium for Verbenas or Foliage plants, unless we can tell them what kinds of Verbenas or plants gained the premium. Then the reports become in a measure a guide to the public in making selections. Occasionally we have to omit the reports altogether, when personally unable to attend and make notes, owing to the almost entire absence of such information in the materials given by exhibitors to the Secretary, who very kindly loans them to us for use. As most exhibitors estimate the honor equally with the pecuniary value of the premiums,—it is their interest to help the society in the publication of their merits.

The display on May 10th was very fine indeed.

The best collection of Ornamental-foliage plants was awarded to Mr. Edward Hibbert, gardener to Fairman Rogers, Esq. The most interesting among these were the different species of *Campylobotris*—*C. refulgens*, *C. discolor*, *C. argyroleura*, and *C. regalis*. The balance was principally of *Dracænas*, *Pandanus*, and other well-known varieties.

The best 12 plants in 10-inch pots, was gained by Mr. James Eadie, gardener to Dr. Jas. Rush. They were: *Aralia reticulata*, *A. palmata*, *Dracæna ferrea*, *Tillandsia rosea*, *Alocasia metallica*, *Adiantum versicolor*, *Maranta bicolor*, *Azalea optima*, *A. ex-tranii*, *A. Juliana*, *A. decora*, *A. spectabilis*.

Mr. Hibbert obtained the second premium.

The collections of *Pelargoniums*, *Tulips*, *Verbenas*, *Petunias*, *Calceolarias*, and particularly the *Roses* were unusually fine; and we regret that in consequence of the absence of lists of the varieties, we can make no use of the awards.

The best collection of *Orchidæ* was awarded to Mr. James Pollock, gardener to Jas. Dundas, Esq., and was one of the finest exhibitions of this beautiful and rare tribe of plants made before the society for some time. It comprised *Dendrobium nobile*, *D. Wallichianum*, *Vanda tricolor*, *Catleya violacea*.

Mr. Eadie had again one of his finely arranged Table designs and Hand bouquets; each of which were awarded first premiums.

Mr. O'Keefe, gardener to Jos. Harrison, Esq., first premium for a Vase of plants.

C. V. Hagner, Esq., had a premium awarded him for a fine dish of Mushrooms.

AMERICAN INSTITUTE HORT. SOCIETY.

At a regular meeting of this society, held at the rooms of the American Institute, Wednesday evening, May 4th, the subject for discussion was Flowers. The tables were appropriately filled with pots of seedling *Carnations*, *Heliotropes*, *Verbenas*, *Pansies*, etc., presented by John Henderson of Jersey City. His *Heliotrope*, 'Belle of Jersey,' was pronounced the best variety yet introduced. Cut flowers of *Crown Imperial*, *Double-flowering Peach*, *Chinese Magnolias*, *Dicentra*, *Mahonia*, *Cydonia Japonica*, *Double-flowering Almond*, *Florientine Tulip*, etc., were also present by Mr. Prince. Mr. Isaac Buchanan, showed fine specimens of the *Cactus* family; also *Orchids* and *Camellias*.

The President of the society, Mr. B. C. Townsend, being a comparative stranger, was introduced with appropriate remarks by Mr. P. B. Mead, to which he responded in a felicitous manner, remarking, that with all the advantages New York possessed, in its extensive park, rich surroundings, magnificent gardens and greenhouses, it was not creditable to say we were destitute of a Horticultural Society, and he trusted that the present organization would fill a long felt want, and awaken a new interest in horticultural pursuits.

The regular business or discussion was opened by Mr. Henderson, who read a lengthy and interesting paper on his favorite theme: 'Flowers, which have always been cultivated by civilized nations in all parts of the world.' The ancients spread them upon their feast tables, scattered flowers in the way of heroes or warriors returning from conquest, and used them for adorning their gods. They are our

second children, and in beholding them we never tire, though the eye is soon satisfied in viewing a thing of art. We surround our homes with them, and rejoice in the early blooms of Spring. Beside, all these have a commercial value, and the apothecary shop is odorous with their perfume. Thousands of acres are planted to flowers in France and Italy, for making perfumes alone. A single grower in Southern France sells annually 60,000 pounds rose flowers, 30,000 pounds each of jasmine and tuberose, 40,000 pounds of violet blossoms, beside thousands of pounds of mint, thyme, rosemary, etc., and he is but one out of hundreds engaged in this branch of horticulture. The atmosphere of some of these towns is so filled with fragrance that a person is made aware of his approach to them by the odors which greet him miles away. America has every variety of soil and climate, equal to either France or Italy, and she may yet rival the old world in her perfumery. Already hundreds of acres of peppermint and lavender are planted in this country, and the product exported to Europe.

Though the old world bears the palm in the perfumery line, and London and Paris, with their Convent Gardens and Marché aux Fleurs, lead our own city in window gardening and the cultivation of flowers in pots generally, yet New York carries on a larger trade in cut flowers than either of the cities mentioned, or any other in the world. To show what is done in that line, he instanced his own sales of some of the leading flowers since last September, which were 50,000 Carnation-blossoms, 30,000 Bouvardias, 70,000 Chinese Primroses, 30,000 Tuberoses, beside over 10,000 Roses, Camellias, Heliotropes, etc., and he was but one of a large number engaged in this business.

The cultivation of natural flowers leads to their imitation for ornamental purposes, and France alone exports \$200,000 worth of artificial flowers annually. The artist manufacturer studies the colors of flowers with the design of transferring them to silks and ribbons, and some of the richest goods are a close imitation of certain shades found only in the flowers.

A perfect mania for flowers, confined mainly to bulbs, existed in Holland about the year 1636, and a Tulip was sold for \$6,000. It was not uncommon for a stock company to have the ownership of a single bulb, the flower being too valuable for one person to own. Referring to a pure white Calla, or Ethiopian Lily, upon the table, the speaker remarked that it was probably the flower alluded to in Scripture, where Solomon in all his glory was not arrayed like one of them.

After a vote of thanks to Mr. Henderson for his valuable paper, the President remarked upon the beauties of some Rhododendrons shown by Mr. Buchanan, and wondered they were not more cultivated. Comparatively few persons in this country know what they are, even, while in Europe they are extensively grown under the name of American plants. An evergreen, perfectly hardy and easy of culture, this flowering shrub should be planted more extensively.

Mr. Peter B. Mead referred to some fine Pansies present, and spoke of the great improvement in this flower within a few years. Its size had been increased, its form improved, and the colors made more beautiful. He gave a minute description of the methods pursued by florists to originate new sorts or to perpetuate established varieties, and observed, that though the uninitiated might strike them from cuttings, they would find it cheaper and better every way to obtain them of regular florists. He also took occasion to condemn the common method of making up bouquets, where every thing is crowded into a stiff set mass, and asked what the innocent flowers had done that they must be put into 'straight jackets.' Speaking of the *Dicentra spectabilis*, he remarked that it was one of the finest flowers for Winter-blooming in the house. It was only necessary to take up a large root and set it in the cellar in the fall, divide and pot it at intervals during the Winter, set it in the living room, and you may have a fine bloom all Winter.

For a plant to sell it must have an European reputation. If Mr. Henderson had only imported his fine *Heliotrope*, 'Belle of Jersey,' and called it 'Belle of Lancaster,' he would have sold thousands of them; florists frequently change the name of a plant before they can effect sales.

The President alluded to this desire for foreign plants, and gave as one reason, the lack of any recognized standard, or body to indorse a variety before it is sent out. Not so in England. A plant is put on trial for one or two years, and if it stands the various tests, it then receives official indorsement, and every purchaser knows he is buying a good thing when he secures it.

It was resolved to hold the next meeting on Tuesday evening, the 31st of May, to begin at 8 o'clock, and close promptly at 10. It was also concluded to hold a flower and strawberry show about the middle of June, the Prize Committee to report upon a schedule and the exact date at the next meeting, the regular business for which is to be the discussion of Small Fruits, opened by Mr. R. G. Pardee.

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Hints for July.



FLOWER-GARDEN AND PLEASURE-GROUND.

The raising of new varieties of florists' flowers is an interesting occupation to the amateur. The process of hybridization applies to all plants as well as to grapes; but good improved kinds of some things may be obtained from chance seedlings. The finest and doublest of Roses, Petunias, Dahlias, Carnations, etc., should be selected, and as soon as the petals fade, they should be carefully removed, or they will cause the delicate organs of reproduction to decay before maturity. A flower may be so very double as not to bear seed at all, as in the case of the Gillyflower or Stock; but if the pistil remains perfect, as it usually does, seed will ensue.

The summer pruning of hedges and ornamental trees and shrubs, that require to be brought into particular shape, will be sedulously attended to through the season, according to former directions.

Amateurs may have some rare or choice shrub they may desire to increase. They may now be propagated by layers. This is done by taking a strong and vigorous shoot of the present season's growth, slitting the shoot a few inches from its base, and burying it a few inches under the soil, or into a pot of soil provided for the purpose. Any thing can be propagated by layers; and it is an excellent mode of raising rare things that can be but with difficulty increased by any other.

Plants set against walls and piazzas frequently suffer from want of water at this season, when even ground near them is quite wet. Draw away the soil around each plant so as to form a basin; fill in with a bucket full of water, allowing it time to soak

gradually away; and when the surface has dried a little, draw in loosely the soil over it, and it will do without water for some weeks. This applies to all plants wanting water through the season. If water is merely poured on the surface, it is made more compact by the weight of water, and the harder the soil becomes, the easier it dries; and the result is, the more water you give the more is wanted.

In many gardens there will be roses of poor and inferior kinds, or of good ones that the owner may desire superseded by better ones. This may readily be accomplished by budding or inoculating, and now and next month is the season to operate.

In almost all works on budding it is recommended to take the wood out of the bud to be inserted. This is necessary in the English climate, but unnecessary here, and never used by practiced hands.

Dahlia seed may be preserved till the spring. Antirrhinum, Rose, Carnation, and such hardy perennials, should be sown soon after ripening.

Hollyhocks will be coming into bloom at this season. They have now become so much improved as to be one of the most popular flowers for the summer decoration of the flower-garden. If the kinds are kept carefully separate, any particular variety will reproduce itself from seed. They may be more certainly kept pure by cutting off the flower stem; each bud will make a plant. The seed should be sown as soon as ripe in a light rich soil, in the open air. If retained till late in the season they will not probably, flower until the next year.

Fuchsias in pots should have the coolest position of the flower-garden assigned to them. They usually suffer much from Red Spider, which makes their leaves drop. The various remedies we have so often recommended should be applied. Frequent heavy syringings are particularly grateful to the Fuchsia.

The Chrysanthemums should be examined, and if the shoots thrown up are thickly together, some of them should be rooted out. If the flower shoots are layered into four or six inch pots, they make very pretty dwarf plants, that are well adapted to

neatly ornament a room or small conservatory, where larger plants would be objectionable.

The time is coming when transplanted trees of the past fall and spring will suffer more than during any other part of the season. If they show a vigorous growth of young wood, no danger need be apprehended, as it indicates that the roots are active, and can supply all the moisture the foliage calls for; but if no growth has been made, no roots have been formed, and the leaves are living for the most part on the sap in the wood and bark, and hot, drying weather will tell with injurious effect on such trees. This is generally first shown by the peeling off of the bark on the south-western side of the tree,—the most drying aspect; and where such exhaustion appears probable, much relief may be afforded by cutting back some of the branches, syringing with water occasionally, shading the trees where practicable, or wrapping the trunk in hay-bands, or shading the south-west with boughs or boards.

GREENHOUSE.

Most of the plants are set out for the summer, as has been recommended,—little care will be required beyond seeing that they are not over or under watered. Some will be yet growing, and may be full of roots. If growth will probably continue for a while longer, pots a size larger may be furnished such. Whenever a shoot appears to grow stronger than the rest, so as to endanger compactness or any desired shape, pinch it back; and any climbing vines should receive due regulation as they grow over the trellis, or they will speedily become naked below. A good, stiff trellis is a desideratum hard to be obtained by the uninitiated.

In training vines, so manage that there shall be a due proportion of branches hanging loosely about the trellis,—as it is this flowing gracefulness that adds half the charms to this tribe of plants which they so profusely possess.

An important point just now is to prepare winter-flowering plants. Cinerarias, Chinese Primrose, and Calceolarias should be sown about the end of the month; and cuttings made of most kinds of plants that are desirable. It is a great mistake, often made, to store up and treasure year after year, old and even grown specimens, when younger ones would bloom more vigorously, and give better satisfaction. Propagation of plants will go on. It is one of the pleasures of the gardening art; and where old treasures are prized, the greenhouse soon becomes a crowded mass of ugliness, with credit to neither gardener nor owner.

FRUIT GARDEN.

Keep pinching out all shoots from all fruit trees that are likely to grow stronger than the rest, or where they are not wanted.

Look after insects. Caterpillars of all kinds are best kept down by hand-picking.

Strawberries should be assisted to make strong-rooted runners,—good and loose soil placed near where the runners are, and if these are slightly covered all the better.

Raspberries and Blackberries should have their suckers thinned out, as weeds, as they grow, permitting only those to remain that will be wanted next year.

VEGETABLE GARDEN.

The main crop of winter Cabbage is often planted the first or second week in July. In planting, if the weather be dry, it is a good plan to make the holes before planting and fill up with water; after soaking away, the plants may be set in, and they seldom wither afterwards, though without rain for a month. Another and more expeditious plan is to have the plants ready with their roots in a pan of water. They are then set into the hole at the time it is made. The water adhering to the roots then gives to the set out plants the advantages of puddling.

Sow Endive, and towards the end of the month, transplant in rows. They should be set out in rows eighteen inches apart, and one foot from each other. The soil can scarcely be too rich for them. Seed may yet be sown for a later crop.

The remarks of last month are applicable for Celery.

If Broccoli is a desired vegetable, it may be had all through the winter by being sown now. In about four weeks plant out into rich garden soil. On the approach of frost, take up the plants, with a portion of soil adhering, and pack them closely in a warm and somewhat damp cellar. They will continue to grow, and produce nice heads.

Cucumbers for pickles are also sown about this time. They usually produce a greater number, and consequently smaller fruit, than when sown earlier. The Short Prickly is the kind to employ.

In some families, large, full-grown Carrots are objectionable. Seeds of the Long Orange, sown now on rich sandy soils, form neat and desirable roots before winter. The same may be said of Beets.

Beans may be sown up to the end of the month. For winter use, the White Kidney is very popular,

although other kinds are very extensively grown for the same purpose.

Our hints for the last month will, in a great measure, bear a reperusal at the commencement of this.

Communications.

MISCELLANEOUS SKETCHES. NOTES ON HARDY CONIFERÆ.

BY ORCHIS.

The constitutional requirements of the Coniferæ vary so widely throughout the different sections of our country, that to form an approved list of infallible species, suited to every locality, would be an impossible task.

Excepting, in a few well-known instances, that are apparently unaffected by almost every contingency of soil and climate, the great majority display a coquettish disposition,—defying utterly all rules that can be formed to secure their adaptability to our climate.

Practical experiments have for several year been made, for the purpose of endeavoring to ascertain certain fixed principles, that evidently control the health and vigor of the tree; but as each succeeding season unfolds new ideas, and startles us with unexplained facts, we are forced into the belief that there are mysterious truths, underlying the well-known practical system that relates to their development, and which is as yet a sealed book to planters. Necessarily this should be in consequence of so variable a climate as ours, and doubtless it is owing in a great measure to this very cause; but when one has become attached to a rare and beautiful specimen, that has succeeded admirably for several years, and probably passed through three or four severe winters without injury, and now having grown to a size that we feel will secure it against further casualties, then perhaps to have it killed during a mild season, is a calamity, against which we have no known remedy, and for which we cannot prescribe. Especially provoking is it when more tender plants that surround it, (which have been in the practice of annually dropping their foliage, against the law of nature for such plants), thrive at the same time with perfect impunity.

Frequent and severe trials of this kind having been experienced by the writer, makes him perhaps rather tedious on this subject; but a desire to ascertain the cause of these effects must be offered as an extenuation of his apparent fault.

The foregoing ideas were suggested upon reading the Notes of Dr. Hull, published in the May and June numbers of the *Monthly*. We have, therefore, taken the liberty of using the Doctor's notes, for the purpose of comparing his experience with that of some planters in Pennsylvania, thus showing, what not only a slight change of climate will accomplish, but also, (which in most instances we contend is of greater importance), that a different consistency of soil tends to produce a totally contrary effect.

The writer of the aforesaid notes commences with the *Picea* or Silver Firs, and in describing the *P. Cephalonica*, he states it browns badly the first winter, and dies during the next; but with us it is as available as any hardy conifer in the whole family. We are aware that some arboriculturists, even in this immediate neighborhood, have not succeeded with it to their entire satisfaction; but this, we contend, is on account of the nature of the soil.

The *P. Webbiana* is considered, "when vigorous and well protected, a beautiful tree," but the *P. Pindrow* is classed with many that "out-door protection will not carry to the end of the third winter." These two conifers, the first a native of our north-western country, and the last of the Himalayas of Europe, are so nearly alike with us, in growth, vigor and general appearance, as to be frequently confounded, and neither can be relied on with any certainty of success. In England they are both considered quite precarious, owing to the liability of the leading shoot to be injured by late frosts or the winter sun.

One of the most curious assertions made by the same author, is that which relates to the *P. nobilis*, *Hudsonica*, *Nordmanniana*, and *pichta*. The assertion to which we allude states that these "have been classed by sanguine amateurs as hardy; not one of them will stand the winter sunlight unprotected, nor will out-door protection carry them to the end of the third winter."

We confess that we are pleased to be able to class ourself among these 'sanguine amateurs,' and we would dearly love to point out to the Doctor a specimen of the *P. pichta*, growing near Philadelphia, that is some 20 or 25 feet in height, and a perfect model of beauty. *P. Fraseri* var. *Hudsonica*, is a very pretty little dwarf from Hudson's Bay, and unquestionably hardy everywhere that we have seen it. Can the Doctor have it true? *P. Nordmanniana* is a particular favorite in this section of country; perfectly hardy, rich dark green verdure, rapid growth, and unexceptionable in every way.

Although we have no very large specimens of *P. nobilis*, the young plants thrive with us in the most satisfactory manner, and give promise of future usefulness.

The *P. pectinata* is next commented on with a long description, and is eulogized in quite strong terms. To this we must take exception; for, after having all the above favorites discarded in so summarily a manner, we do not feel like listening to a pleasing dissertation on a species that is at best uncertain with us in this latitude; and in our list of hardy conifers, we place this Silver Fir in a far lower position than the previous list so unhesitatingly denounced.

We pass over the *P. balsamea*, not considering it of sufficient use to planters to merit an extended notice—being beautiful whilst young, but becoming disfigured by age; but to the descriptions of *Abies excelsa*, the valuable and magnificent Norway Spruce, and the *A. Canadensis*, our own lovely Hemlock, we cheerfully say—Amen. Two more charming and beautiful trees it is impossible to produce.—combining grace and elegance, with regularity of outline, divested of all forms of stiffness, and artificial appearance; the one a representative of the transatlantic forests, the other a type of our own productions, they stand as an embodiment of perfection in a tree.

A. Menziesii, says the Doctor, "all die early in December;" with us it is quite hardy, and we believe this to be the experience with others in this latitude.

What is meant by *A. excelsa* also dying early in winter? Certainly an error.

P. pinsapo stands two winters unprotected, where many much hardier plants die outright. It is uncertain at the East.

A. Douglassii is reported as half-hardy, and only survives two or three winters; here it generally survives finely, and was only injured a few years since during the two extremely severe winters. A specimen frequently alluded to, in the Evans Arboretum, a few miles from Philadelphia, is about 30 feet high, and a magnificent tree.

We coincide with the remarks relative to *A. Morinda*, although it mostly manages to survive here, frequently for several years.

The experience of the Pine family proper is so similar to our own, that we shall not deem it necessary to offer any remarks thereon, excepting to record our assent with the Doctor's opinion of the *P. excelsa*. He says, "It mildews, and gradually parts with its leaves, and, somehow or another, it is dead before we are aware of it." A whole vol-

ume could not better describe this unfortunate peculiarity of an otherwise elegant tree, than has the Doctor in this simple remark. The best preventive is a light and rather poor soil, that will check its overabundant growth.

Cedrus argentea, *Atlantica*, and *Africana* are one and the same thing; and the Doctor's experience being very similar with them all, confirms the truth. Some individual plants are much hardier than others of the same species, hence the slight difference in the report of these three mentioned. *Cedrus Libani* is usually successful with us in proper soils and situations.

Juniperus oblonga, *repens*, and *Chinensis* are all hardy here; *J. recurra* (*true*, for there is a spurious plant in cultivation) is not entirely so; *J. communis succica* quite as hardy as the Irish variety.

In the continuation of the same article, published in the June number of the *Monthly*, facts are stated in connection with the Arborvitæ class that we entirely disagree with. *Thuja occidentalis*, our well known and valued native species, is quite disparaged, on account principally of the change in the foliage during the winter months. The whole family is more or less subject to this slight drawback, but not sufficiently so in our judgment to discard it. The author says it "has been greatly over-estimated." The Siberian is doubtless preferable in some respects, but is a much slower grower, and possibly will not make so large a tree. *Thuja aurea* (if the common Golden Arborvitæ of the nurseries, which is now considered by botanists a *Biota*) is certainly more reliable in the West than throughout this section. This variety is frequently injured with us during severe winters, and is rapidly becoming unpopular. The Weeping variety is also mentioned as hardy, whilst with us it is quite often severely injured.

The Doctor's remarks on the *Sequoia gigantea* certainly gives that celebrated tree a *quietus*, as far as its cultivation in Missouri and Illinois is concerned: and after long and patient trial, which has resulted in the loss of several specimens, we, too, feel willing to resign it.

We had intended noticing a few species and fine varieties of the Coniferæ, which promise success in this State, and which the Doctor has not mentioned, but our notes have already reached a much greater length than we originally purposed; we must, therefore leave them for the present.

In conclusion we desire to add, that such information as is conveyed in the article alluded to, is of the greatest value to arboriculturists; and it has really been a treat to find this commendable love

of trees spreading throughout our land. The author certainly deserves great praise, not only for testing so many novelties, but for his desire to impart knowledge in regard to their future adaptability to his particular locality.

[Our correspondent resides about 25 miles from Philadelphia, and has a dryish stony soil, and an elevated and exposed situation. We should be very glad of similar notes from other persons. There is something singular in the varying hardness of these rare pines. Nothing but collecting the experience of various cultivators will enable us to deduce any rule.—Ed.]

SCIENCE IN SPORT.

BY J. S., LANCASTER, PA.

My attention was called to a dense group of insects, on the 8th of June, 1864, basking in the sun on one of the extended laths to a grape vine. There they were, like a full company of Zouaves, all on a huddle, as if they had just broken ranks; with their black shining heads erect, their jointed antennæ, (also black, except the terminal joint, which is of an orange yellow), sticking out like bayonets from the crowd, their jet black thorax like a round jacket, with a pair of short rudimentary wings, like short coat tails, also black, while their enlarged, ovate and pointed abdomen is like the full-blown Zouave's unmentionables, highly inflated, and of a reddish or deep orange color. The three pairs of legs are also jet black, and the sword-shaped proboscis from its snout, of formidable dimensions for so small an animal, one-fourth of an inch in length.

The stately gravity of their movements is amusing. These little creatures are readily known to belong to the order Hemiptera, and family Pentatomidæ, like the common squash or pumpkin bug; and being under proscription, any ordinary gardener would think he had done the State some service by smashing the whole brood at a single blow, clustered as these were previous to separation.

I will add, that on the lower side of the lath I found a large patch of oblong, cylindrical cells, placed in rows close to each other, like a honey-comb, the eggs from which the brood had evidently escaped.

Before we commit ourselves to wholesale murder, let us inquire whether they are a friend or foe to the gardener. We will find that they belong to a carnivorous class,—these are the young of the *Prinotus novimarius*; they feed upon aphids, coeci, and other mischievous vegetable feeders, so annoying to the horticulturist,—hence we even suffered

the one captured (for examination under the lens) to escape under a free pass to shift for himself. That is our policy.

The matured female measures over an inch and a half in length, and is easily known by the toothed crest on the thorax, like a portion of a coarse toothed circular saw. They are quite common in and about Lancaster.

HOYA CARNOSA.

BY J. P. NORRIS, WESTCHESTER, PA.

This well known hot-house plant has some peculiarities which may not be generally known. It shall be our endeavor, in this brief sketch, to point out these and afford, if possible, some reasonable explanation of the cause of the said peculiarities. We have had this plant under cultivation for some time past, and it has always been among our favorites.

It claims our attention not only on account of its peculiar waxy leaves, but also for its beautiful, though very unnatural, flowers. Had a manufacturer of wax flowers made one of these plants for the first time, and adorned it with a couple or so of its strange flowers he would have been pronounced a bungler and one who had mistaken his vocation: such is their unnaturalness!

The leaves of this plant are about an eighth of an inch thick, and have a very waxy appearance. The writer had heard that the plant could be propagated by taking off one of these leaves and placing it in a cutting-box in such a manner that the stem of the leaf was in the ground. He resolved to make the experiment. He accordingly cut about eighteen of the leaves of the plant close to the stem of the plant. These were inserted with the stems in a cutting-box, containing an equal mixture of pure sand and potting compost. The result was awaited with considerable interest. Three weeks after they had been placed in the cutting-box, one of them was pulled up and found to be very well rooted. It was replaced in the box, and the whole box of them set in a greenhouse, where they were kept during the summer. The glass of the greenhouse had been whitewashed, and the temperature was never allowed to rise higher than 80°. This was in June. In September they were again examined, and proved to have greatly increased in roots, but there was no sign of a bud shooting up from the leaf, as it was said they would do. They were kept in the cutting-box that winter and the following summer. It was now just a year and a half since they had been planted, and

yet they showed no signs of shooting up. It may be interesting to the readers of the *Gardener's Monthly* to know that they are *still under trial*.

It was feared that perhaps in cutting off the leaves the bud that is contained at the junction of the leaf to the stem of the plant, had not been taken off with it. Accordingly more leaves were prepared—this time cutting off the leaf so close that it took off some of the bark with it. Still the same result happened as in the former experiment.

The writer has found no difficulty whatever in propagating the *Hoya carnosa* from cuttings, provided that they had a piece of the stem of the plant connected to the leaf.

For a person who wishes to propagate a large number of them, we recommend the following plan: Take an old plant, which has grown to a considerable height, and place it upon a bench near the glass of the greenhouse. Next fill about fifty 3-inch pots with soil, composed of half sand and half good potting-soil. The pots are now to be placed on the bench, along-side of the old one. We now take a shoot of the old plant and layer it into the small pots until we come to the end of the shoot. We proceed in this way until the whole of the shoots of the old plant have been treated in this way. They are now to be left alone, with the exception of keeping the earth from getting dry. In about three weeks the stem of the old plant should be cut between each pot. The pieces of stem now shoot up, and we have any number of young plants. The old plant also shoots up from the roots, and makes a fine plant as ever.

A PROPAGATING HOUSE.

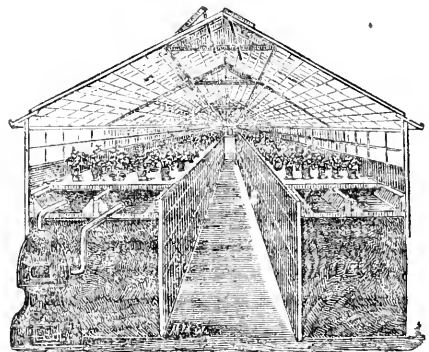
BY H. E. HOOKER, ROCHESTER, N. Y.

Nurserymen and gardeners feel the necessity of glass structures of some kind, to secure that control of temperature and moisture which is necessary to the successful and profitable propagation and growth of many specimens and varieties of plants, but so far as I know, have never heretofore been able to secure this control at a low cost, or in a shape adapted to their wants. The house, and the apparatus, which I am about to describe, secures, I think, these requisites in a very complete manner; and, although I am not so vain as to suppose it will not be improved upon, I am well satisfied it is a decided improvement upon most, if not all, of those not constructed in this manner.

Since writing a previous article upon "Cheap Hot-Water Apparatus," I have received a number of letters of inquiry concerning such houses. I

shall, therefore, in this article reply to some of them, and in so doing, endeavor to meet the reasonable curiosity of those who wish to know more about these houses.

I call the house a "Propagating House," because so termed by nurserymen; but with a variation of the dimensions, to correspond with the size of the plants to be grown, it will answer well for almost all classes of plants and vegetables. It is constructed upon the smallest scale, at the *end*, which it is desirable to build—the *length* may be increased or decreased to suit the wants of the builder. If built with a separate flow and return upon each side of the house, there would be no difficulty in working one 150 feet long, or even longer. This size is suitable for nurserymen, and gardeners who wish to grow plants only to a moderate size, for removal to another and larger house, or to the open grounds. It is described from one now in use in our own nurseries.



SECTION OF A PROPAGATING HOUSE.

This building is 10 feet wide inside, viz.: tanks 3 feet 9 inches, on each side of the house, walk 2 feet 6 inches wide in the clear. This walk is excavated in the soil about 3 feet deep, and is all the excavation required, except to throw off the loose surface soil sufficiently to secure a firm and level bed for the tanks. The sides of the building are made of planed and matched boards, nailed horizontally upon posts of 2x4 inch hemlock scantling, 4 feet apart: this is best done before setting the posts, a whole side is then set up at once, and the foot of the posts firmly fixed in the earth, about one foot deep below the boarding. No side light is required, nor side ventilation. The building is 6 inches lower at one end than it is at the other, to give a current in the gutters formed by rabbeting and nailing a slip along the eave boards; at the highest end it is about 2 feet above the surface of the surrounding soil. The eave boards are 9 in-

ches wide, nailed firmly upon the inside and outside boarding, covering the whole thickness of the wall, and forming all the plate needed. As this board is to receive the lower ends of all the sash bars, it should be 1½ inch thick and of good stuff. Rafters 1 inch by 4 inches are nailed to each post, and to a ridge pole of the same size as the rafters.

Short 'collar beams,' firmly nailed with pressed nails to the rafters secure the necessary stiffness to the whole structure; these collar beams barely clear the head of a person walking within.

The sash bars are let into the eave board, (with a plain level), so as to bring the glass down fair upon it; the upper ends of the bars rest upon a purline 1x4 inches, nailed in between the rafters, about 14 inches down from the ridge pole. Ridge boards 15 or 16 inches wide, on each side, cover the walk and lap upon the glass sufficiently to keep all tight: five lights of 8x10 glass just reach from the ridge boards to the eave. Ventilation is secured by cutting holes through the ridge boards, 1 foot wide by 2½ or 3 feet long, at intervals of 12 feet; these holes are covered by board shutters (well elevated to prevent warping) lying upon the top of the ridge boards, and meeting each other in the centre of the ridge, to prevent leakage; they are hung by the lower edge, and are readily accessible from the walk below: A door at each end (or a door at one end and a window at the other) completes the ventilator.

There is a boarding alongside the walk, to retain the earth in place; carried high enough above the top of the tanks to keep pots or soil from falling into the walk; this is nailed to small oak posts 1½ or 2 inches square, driven into the earth at the foot, and tied across *under* the tanks to the side posts of the building; these are put in before the tanks are made.

The wood work is painted with three coats of white lead, and carefully glazed; such buildings being peculiarly exposed to the action of dampness and heat, should always be well protected with paint.

The location of a Propagating House should be such that complete and rapid drainage can be secured to the fire-pit, or furnace-room; and a tile drain be laid along each side, *outside* the house, sunk lower than the bottom of the walk in the house.

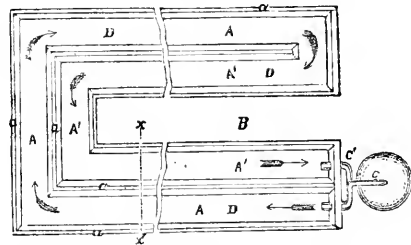
The house runs north and south, or nearly so, and has an inclination of 22½ degrees in the roof, equal to a rise of 1 foot in 2.

Houses built in the above described manner, are scarcely as expensive as an equal area of hotbed

sash and frames, and are far less subject to damage by breakage of glass and sash. They are secure from winds which penetrate and carry off the heat from taller buildings, and are readily protected in winter or shaded in summer. They do not require near so much fuel for heating, and they grow better plants, because every plant comes near the glass. They require no staging, and if supplied with the heating apparatus I shall describe, can be perfectly and equally heated in every part, at a small expense. Hotbed, or other sash, can very readily be made into a house of this form, by building the rafters just far enough apart to receive the sash between; and nailing a strip under the sash, upon the rafters, dispensing, if desired, with the eave board, but using the ridge boards and ventilators.

Having described a house, let me proceed to describe my apparatus for heating it; and here I would say, that the Patent which has been granted to me applies only to this part, viz., to the Tanks or Troughs for conducting the warm water through the building. The *principle* of the troughs is not new, but the apparatus is of my own invention. This apparatus can be best understood by an examination of the following engravings, designed to illustrate the principal points:

Fig. 1.



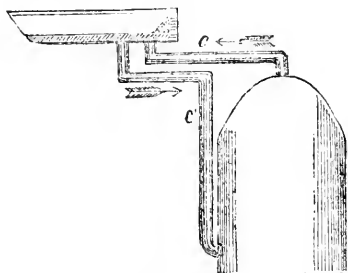
This is a ground plan, showing the manner of securing a circuit of water through the house, and back to the boiler, by connecting the *top* of the boiler with the flow-pipe A, and the *bottom* of the boiler with the return-pipe A'. Our Propagating House is 75 feet long, which gives a current through 300 feet of tank, before reaching the boiler again; in this case there is usually a loss of about 20° of heat from the water in the circuit.

Fig. 2.



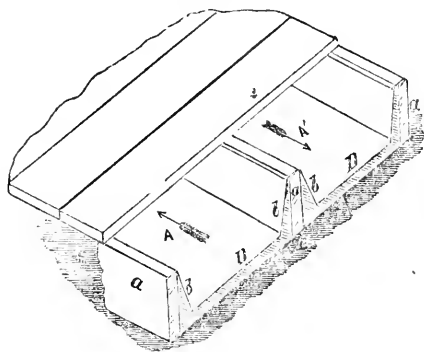
An elevation, showing the manner of connecting the pipes with the tanks through the *side*, at one end.

Fig. 3.



A similar elevation, showing the manner of connecting through the *bottom* of the tanks, and which is generally considered the best. In all cases the highest point of the boiler must be a little *below* the tanks, otherwise the tanks would overflow before the circuit could be obtained.

Fig. 4.



A cross section of the tanks in the plane of the line *x x*, Fig. 1.

The first illustration, of a section of the house, also furnishes a perspective view of the tanks.

These tanks are covered with one course of inch rough boards, upon which is spread a coating $\frac{1}{2}$ in. thick of water lime mortar. The mortar when dry effectually prevents the escape of steam, or dampness from the tanks into the house; and forms a stone surface admirably adapted to giving off a temperate heat, and furnishing a warm bottom upon which to stand pots, place soil for growing plants in, or sand in which to strike cuttings. This covering is stronger than slate, and I am inclined to think preferable to any thing else.

It would exceed the limits of a reasonable article for your magazine to describe *minutely* the manner of constructing these tanks; but I would say, they are formed sole of strips of rough boards for the boundaries, and water lime mortar both laid upon upon the soil, without any frame or foundation whatever. In a few days after the laying, the

mortar becomes firm enough to retain water, and after that hardens, until as firm as stone, and entirely impervious to water or dampness, in this state, and lying immoveably upon the solid earth, it is a perfect and indestructable conductor for the water and heat.

Hot water for these tanks or troughs can be best secured *here* by the use of a cast-iron boiler, and good hard coal. Several patterns are before the public; I cannot decide upon their comparative merits, not having tested them; the one used in the Propagating House figured in this article, was made by Messrs. Weathered & Cherevoy, of New York, at a cost of \$45, last fall, and has proved sufficient for this one house, in the coldest weather, without the help of a flue. If a larger house is to be heated, I should advise a larger boiler. A flue cannot be advantageously introduced into such a Propagating House, but should be made to help heat a wider plant house, or warm the work room; if the boiler is well set, the flue passed around over the top, and a damper built in the chimney to check the fire when well ignited no serious loss of heat will occur.

The following are some of the advantages possessed by the arrangement described:

First. The tanks are perfectly *tight* and indestructible, growing better by use, and not liable to be out of repair, while the wooden tanks are with difficulty made tight, will shrink and spoil if the water is withdrawn, and must soon decay.

Second. The construction is *very cheap*, costing not more than one-sixth that of good wooden tanks, which have heretofore been considered the least expensive of any.

Third. They do not require the services of a professional or skillful person to construct them,—any man of moderate ingenuity can make one.

Fourth. The *form* is just what is wanted, the flat surface being much better than round pipes.

Fifth. They possess the advantage of retaining the heat for a long time, parting with it gradually, so that sudden and injurious changes of temperature and moisture are avoided; the plants are not scorched in one part of the house and frozen in another; the air is not robbed of moisture, so as to cause cuttings to perish, nor steamed until everything damps off.

Sixth. A *bottom* heat is secured to every place and plant, eminently favorable to the formation of roots, and causing cuttings to strike root without difficulty.

The following are some of the objections to these tanks, suggested to me by practical men:

Is there not a loss of heat by absorption into the soil; which is thus conducted away where it is not available? I answer, no, not to any injurious extent; very little, if any, is carried out of the building; what is absorbed when the tanks are *hot* must be given off if the air or tanks become cooler. This loss, if any, is more than compensated by the lesser *area* of air that remains to be heated. Heated air escapes rapidly out of a house if there is opportunity; but warm soil or mortar will not so readily become cold. There is no building with which I am acquainted, which can be kept at an even temperature through all the changes of weather, so readily as one with a large tank of warm water, and none where the loss of heat is so small.

Are not such houses damp in winter and in dull weather? No; they would be damp if the whole top of the tanks were covered with moist earth, boxes of sand, or other damp materials, when there is little sun heat to dry the air. Dampness is provided against, by leaving enough of the surface of the tanks clear to dry off the moisture of the atmosphere. As the power of the sun increases, the tanks are to be more and more covered with soil, pots, or sand, by which a great saving in watering is effected, and the necessary humidity of the atmosphere preserved; this point is of great importance, and this is one great merit of my apparatus, it will be very carefully attended to by good propagators. There will be no dampness from the *tanks* if they are well made, and well covered with cement.

Is there no difficulty in making them tight? I answer, none whatever; if *good materials* are used in the construction, and sufficient time allowed before turning the water on,—there will be some absorption of water *at first*, but no leakage.

Will not frost penetrate and destroy the tanks? I presume if such houses were allowed to freeze up solid, there would be cracks made, as there would be in iron pipes or wooden tanks; *no* such apparatus should be allowed to freeze,—it would spoil the boiler to freeze it with water in; but such houses are so low, and so much in the ground, that they can very easily be protected against all but the most intensely cold days, at such times a fire should be kept.

Can the iron pipes be securely connected with the cement tanks? Yes; by building a little masonry around the pipes and into the cement tank to hold the pipes firmly.

Will the cement stand *hot-water*? It will, perfectly; and become harder each month, until it is as hard almost as flint: hot water has no more effect than cold.

This subject opens in many different directions, each one important enough for a separate essay; but I cannot enter upon any of them now. The subject of *vegetables*, for instance, which I believe can be more profitably and better managed in this way than in hotbeds, may, perhaps, afford the topic of a future communication, if this should be found acceptable to the readers of the *Monthly*.

WILD FLOWERS.

BY THOMAS GARDNER.

(Continued from page 173.)

The Poppy family mostly belongs to Asia,—but very few representatives being found in our country. The Bloodroot or Puccoon, (*Sanguinaria Canadensis*), however, is very common over the whole of the United States. There is but one other true Poppywort really indigenous to this country, and this is not very showy. It is a low-growing, yellow-flowering, perennial plant, of western woods, known to botanists as *Meconopsis diphylla*.

The class of fumitories has one genus, in which almost all its members are pretty. This is the *Dicentra*, commonly known as 'Dutchman's Breeches,' from a resemblance in the flower to some antique pattern of pantaloons. They are all northern plants; one white (*D. cucullaria*), one purple (*D. formosa*), and one white and purple, flowers very pretty, (*D. bulbosa*). There is a pretty climbing plant, known in cultivation as the Alleghany Vine; this is the *Adlumia cirrhosa*, and though not common, is found on rocky hills in most parts of the Union.

The next tribe of plants to be noticed is a very large one—the Cabbage tribe, or cruciferous, as it is most generally known. This is a very natural looking class; all the flowers consist of only four petals, arranged in the form of a cross, whence the name 'cruciferous.' The Wall-flower, Stockgilly, Turnip, Mustard, and Candytuft are some common things that we may name as serving to identify the class to the common observer. Though there are some seventy species, natives of the United States, very few are handsome enough to warrant notice here. Most of them are very common weeds; one of them (*Draba verna*) is the first flower to bloom in spring. It is a very small plant, with white flowers, and is abundant every where before the frost is fully away in spring.

[To be continued.]

The Gardener's Monthly.

PHILADELPHIA, JULY, 1864

✉ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOB, Box Philadelphia."

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ROLLING THE GROUND.

Many cultivators of the soil, not excepting some of the best, frequently err in leaving their soil too loose about their trees and plants. In new plantations of strawberries, this is a common cause of failure. The ground is dug, line 'stretched' and plants set out all in one day; and continual watering, shading, or other care is necessary to keep the young plants from withering, if the weather proves dry for a few days after planting.

It may be set down as a rule, that after turning up the soil, it cannot again be pressed down too firmly, if dry enough to pulverize by the rolling. This seems to be better understood by the farmer than the gardener. The roller is an indispensable implement of cultivation to him; but to the gardener it is almost unknown for any other purposes than for using when the ground is wet to level his lawn or harden his walks. Yet it may be used to very great advantage in numberless cases.

To suppose a case with an extensive Strawberry-grower. Let the ground be first plowed up, harrowed level, and the plants set out. The next day or the first day after, when the upper surface of soil is dry enough to crumble, let a horse-roller be drawn over the whole piece, and the benefit would be incalculable.

We have never known this to be done in this way, but we have often seen it practiced in small gardens, in a smaller way with the foot, and invariably with excellent results. We know one cultivator who is a great advocate of September planting,—for all successful cultivators have their particular 'times' for the success that might perhaps be properly accounted for by other reasons,—and he always follows the pressing plan. The merest novice knows that if a strawberry has its crown covered by the soil in transplanting the heart is apt to rot away; and yet, when the soil is loose, if they are not deeply planted they soon dry and wither

away. Our friend plants very shallow. He sets them, in fact, so as to barely cover the fibres. After setting each row he goes over, and setting his foot on each plant, presses it firmly into the ground. In the course of a day or so he goes over the whole patch, watching for any that may appear a little wilted. They get no water if he does find any of them,—nothing but another firm pressure of the foot. It may not rain for weeks, but we do not remember of his having any failure to speak of.

So far as the 'loosening of the soil' means pulverizing in cultivation, it is an idea of the first importance. Digging and plowing are not so much to make the soil loose, as they are to comminute and separate one small particle of the soil from another, so as to make as many absorbent surfaces as possible; and this can be better accomplished by heavy pressure on partially dry soil, than by any other way.

Plant cultivators, we think, are further ahead in this knowledge than the operators in other departments of gardening. The best of them choose rather dry soil for potting, and then ram it in around the plants as tightly as possible, and always with good results. The finer the fibres, usually as in heaths and azaleas, the tighter is the soil pressed; but is singular that the very men who understand this best, seem to forget it in their out-door operations.

Many a transplanted tree that would otherwise die, can be saved by having the soil about it beaten hard when dry. The finely powdered soil seems to have the power of absorbing moisture from the air; and in many other ways will the practice be found immensely beneficial.

There are innumerable instances where the roller would be of far more benefit to the crop than the water-pot. We have no doubt many of these will readily occur to skillful cultivators,—and we are sure it is only necessary for us to refer to the matter as we have done, to receive a response from them, that "it is quite correct, but we did not think of it."

POSTAGE ON SEEDS AND CUTTINGS.

Many of our readers send us specimens of fruits, flowers, etc., to get their names, or perhaps an opinion of their average merits. It is well to bear in mind that by the new postage law, seeds (under which head fruit comes) and flowers (cuttings) can be sent by mail in parcels under four pounds, for half a cent per ounce.

The parcel must be marked on the outside 'seeds' or 'cuttings,' as the case may be, and must be tied

in such a manner, and not sealed, so that if necessary, the officials may examine contents without destroying the wrapper.

Quite recently, a kind friend sent us a parcel of Western Prairie seeds, by mail, on which he paid 48 cents letter postage, when, if he had marked it 'Seeds,' he need have paid but 8. It was annoying to feel that our friend, in his desire to serve us, had expended more than there was occasion for. The seeds, however, were valuable, and we should have been satisfied to pay much more, had we to buy them.

Sometimes it works the other way. Recently a far away correspondent wanted our opinion of a seedling flower. It did not weigh four ounces, and if sent by mail, would have cost 2 cents. He sent it by Express, and paid it through to Philadelphia, *One Dollar*. Adams Express sends it to Germantown by a pet line of theirs, costing us 25 cents more,—but the worst feeling was that there was nothing new or uncommon in the flower for all.

Last fall we received some apples from Iowa. The person sending 'paid through' for them. But the Express company understood 'through' to mean so far as they went. The next company charged us \$2 25, and the apples were worthless. The fruit did not weigh 3 pounds, and a tin box would have weighed perhaps half a pound more—costing by mail 28 cents to our door.

The Adams Express company, when things are paid 'through' for us, do not deliver them here, and we have usually to pay nearly as much for their

sending them from Philadelphia to Germantown, as our friends perhaps pay from Ohio to Philadelphia. We were taxed some fifty dollars this way last year and the preceding; in three-fourths of the cases entirely for the sender's benefit,—but even in these cases we should not so much object, as we are willing to lose a little in the effort to be useful, but it is sheer waste to the sender and to us, as the mail will carry quicker and so low.

As the season is again approaching, when we know our friends do not forget us when enjoying their novelties, we strongly recommend to them to remember the excellent mail facilities now existing; and it is well for all business men, and others interchanging with each other, to bear in mind the same thing.

WHITTLESEY'S LOCOMOTIVE SEAT.

We had the misfortune to have to do all our hard work in a generation when every plan for doing work easily was considered as indicating laziness. The Locomotive seat would have had no chance of success in that day; but the wonders of the real locomotive have broken down all this prejudice, and such inventions as this of Mr. Whittlesey's cause the originators to be classed among the blessed.

The following illustrations explain the idea.

Fig. 1 is the seat. Fig. 2 shows it fastened to the foot.

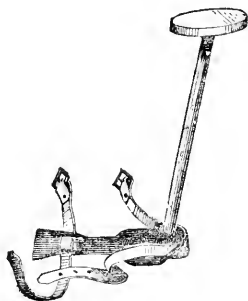


Fig. 1.



Fig. 2.

The inventor says of it :

"The invention is designed to relieve a want long seriously felt by Gardeners, Florists, Strawberry-pickers, etc., by furnishing an ever-ready support in all cases where their hands need to be employed on or near the ground.

Its chief advantages are :

Simplicity—It consists only of a malleable iron foot piece, with an oblique standard and seat of wood, all (weighing about one pound) firmly and quickly attached to the foot by two straps.

Locomotion—It enables the wearer to walk about at pleasure, (the stool constantly attending him), with both hands free for other purposes.

Adaptation—It can be used between thickest rows, or wherever the wearer can set his foot."

THE EXHIBITION OF STRAWBERRIES AT THE SANITARY FAIR.

As noticed in our last number, the offers of the Fruit Committee of Silver Fruit Knives, closed on the 18th of June. The exhibition, though highly interesting, was not equal to the expectations of the committee; in consequence partly of very short crops, and partly through the imperfect direction on the part of the contributors, by which much intended for the Fruit Committee got delivered to the wrong departments, and never came under their observation or control. The contributions of A. Maillard, of Bordentown, N. J., promised every day, reached the committee only once, on the 8th of June; and many similar instances occurred. In fact, none but those delivered by the exhibitors themselves on the tables of the committee, seem to have reached their destination.

In spite of these great drawbacks, there were some splendid fruit exhibited.

For the best Two quarts of any kind, on the 8th of June, the Silver Knife was awarded to Nathan Leeds, of Cinnaminson, N. J., for Russell's Prolific. There were some splendid dishes in competition against it; the most note worthy of which were Hovey's Seedling, Albany Seedling, Triomphe de Gand, Iowa, Athlete, French's Seedling, and a new seedling, supposed to be a cross between White Alpine and Albany Seedling. The acting committee on this day were Thomas Meehan, Jas. Ritchie and Robert Kilvington.

The French's Seedling were magnificent, and very little inferior to Russell's Prolific, and much superior to any samples of the same variety we have ever seen before. It is a large round berry, flesh rather soft, but of good quality.

The offer for Hovey's Seedling, on the Second day, was not responded to by any one. Probably it is going out of cultivation, through being superseded by more popular kinds.

For the largest quantity of any kind, on the 10th, to Wm. Parry, Cinnaminson, N. J., who contributed Thirty-two quarts of Albany Seedling.

The best Two quarts of Triomphe de Gand were sent on the 13th, by D. W. Herstine, of Germantown, Pa. They were splendid berries, and it was perhaps poetical justice that he should have the Silver knife for them, for, in addition to the superiority of his berries on this day, he was the most regular and liberal of the Strawberry contributors.

W. L. Schaffer, Esq., gained the knife offered for the best Albany Seedlings, on the 15th.

For the best quart of any kind, on the 16th, the competition included many fine dishes. The closest rivalry was between Triomphe de Gand, Fillmore, Lady Finger, and Albany Seedling. The Lady Finger was the most remarkable fruit of that variety probably ever exhibited, and so pressed the Triomphe de Gand, that the committee thought proper to act only with full numbers, as by size and general appearance alone the spectators would undoubtedly vote for the Lady Finger. After fairly testing them, the committee unanimously awarded the knife to J. Vaughan Merrick, Esq., for Triomphe de Gand. The committee comprized Messrs. R. Buist, R. Kilvington, W. Hacker, H. A. Dreer, J. E. Mitchell, W. L. Schaffer, Thomas Evans and Thomas Meehan.

Probably the most attractive strawberries contributed during the Fair, was the Lennig's White, from Mr. Peter Mason, of Absecon, N. J. In size and quality they were superior to any thing exhibited during the whole period. We would, in fact, take this kind for our standard of flavor, as Burr's Pine used to be. They were exhibited on the day when the premium was offered for the greatest number of varieties, or they would most probably have met some better fate than merely this notice of them. Some of the same variety, of superior quality were exhibited by Miss Lennig on the day set apart for Hovey's Seedling.

It is clear that no exhibition of Strawberries will decide which is the best Strawberry in every respect. Russell's Prolific being usually a pistillate, will at times fail no doubt, and will get an uncertain character, while Lennig's White usually grows so much to foliage, as to be comparatively unproductive in rich soils. Mr. Mason reports that his bears abundantly, probably owing to the poor soil, which prevails in that portion of New Jersey,

checking over-growth. Those who wish to cultivate this variety, will probably find it to their interest to grow them rather thickly together, and in poor soil; and, as some people find a good account in mowing off the foliage of rank growing varieties before the leaves are quite mature, this practice will probably be found of much value in raising this superb kind.

WARMING AND CONSTRUCTING PLANT HOUSES.

We commend to the special attention of our readers the articles in our past and present numbers, by Mr. H. E. Hooker.

When new inventions are patented, so that no one can use them without paying, it is but just, as a rule, that inventors should expect to make their inventions known by advertising. This is so well known, that for fear it should be charge to Mr. Hooker that he has taken an unfair way to advertise his plan, we take occasion to say that the articles have been written at our special request.

We pride ourselves somewhat on having led the van towards the improved cheap houses now so numerous in the United States, and are anxious that every new suggestion should be fully discussed in our columns.

We see very much to commend in Mr. Hooker's views. Some of them we think will bear a still further improvement,—about all of which we shall no doubt hear from our readers in due time.

Receipts and Queries.

☞ Communications for this department must reach the Editor on or before the 10th of the month.

☞ The Editor cannot answer letters for this department privately.

GRAPERY—*M. P. F., Hallowell, Maine.*—In one of your last year's numbers, you had a notice of Mr. Chaney's Grapery, of Manchester, Conn. I was much pleased with Mr. C.'s plan. Wishing to close my house, and to be absent for the winter, what I should do with my pet grapery of only 12 feet square, and ten vines, was the question? As I should leave all closed, and no one to take charge of it, I concluded to adopt Mr. C.'s plan, and altered my front sash, so as to open at the top; and cut a small door at the top of the house on the east side, about 2 feet square. In November I laid down my vines, (2 year old in the grapery), covered them with Spruce boughs, to the depth of 12

inches. I then fastened my front sash open about 4 inches, and my 2 feet sash opened—locked my door, and left it, and did not return until April 28th. I then removed the boughs, raised the vines a little from the ground, (they were cut down last fall 3 to 4 feet long), watered them, and left them until May 12th. At this time a number of the buds had started, and on the 21st tied the canes to the rods, and now, the 30th, the laterals are from 4 to 15 inches in length. I have besides my 2 feet ventilators, one at the top of the house 3 ft. square, hung at the top—opening at the bottom.

My trouble is the extreme heat of my grapery, 112°, more in July I am afraid, although the leaves will protect it some from the extreme heat. Will it remedy it by cutting another window at the other end, opposite the 2 foot one; or will it do to leave open my front window at the top, say 4 inches.

I have a strip of board at the top, which the sash falls against, leaving an opening 4 inches the length of the sash, so that the air, as it enters, is thrown against the roof, between the glass and the vines. I also have a window opening from my dining-room into the grapery, (say 12 square 11x16 glass), but lowering the top sash does not change the temperature.

Will you be kind enough to give me your advice?

[You will find much benefit from coating your glass on the outside with a thin solution of Sugar of Lead. It will keep out at least 20° of heat, and still afford light enough. If still too hot, we should prefer cutting another top window.]

If it were possible to keep your house moister, 112° would not hurt. Opening a front window will only make the air drier, when grapes suffer more.]

SEEDLING POLYANTHUS—*L. B. G., Rochester, N. Y.*—I enclose you a flower taken from a seedling Polyanthus. It bears flowers in clusters, like common Polyanthus, each flower like the one enclosed. It is a new thing to me, and taking it for an odd freak of nature, send it for your inspection.

[This is usually called 'cup and saucer' among gardeners, one flower being within another. It is not uncommon.]

CURELIO—*M. B., Rochester, N. Y.*—Please state in your next number if there is any other cure for the Curelio than shaking the tree according to the well known process.

[There is no better remedy discovered than shaking and destroying. Partial success has been obtained by different other processes, as described by our correspondents; but we have no faith in any

thing but shaking being uniformly satisfactory,—and this will not be entirely satisfactory. For choice fruit it is better to train espalier fashion, and cover with gauze steeped in tan bark.]

SHADING EVERGREENS—*J. C. S., Des Moines, Iowa.*—Should one year old Norway Spruce, that have been transplanted, be shaded from the noon-day sun?

[If they came a long way, and had their roots perhaps somewhat dried, shading will benefit them. If merely removed carefully from one part of ones grounds to another, there will scarcely be occasion for the extra trouble.]

SEEDLING PELARGONIUM—*J. Hirst, New Philadelphia, O.*—Your flower came in good order, packed in damp moss. It is pretty, but not we think distinct from other French hybrids, of which there are now numerous varieties. Still your success is so encouraging, that we advise you to persevere in raising them. You will probably be able to raise new varieties fully equal to to imported ones.]

THE TRIBUNE STRAWBERRIES.—We have seen these in bearing this year, from young plants set out last fall. We can form no opinion of them beyond this, that we think they promise well. One of them, the *Monitor*, we think will probably prove a very desirable early variety.

AMERICAN TEA—*C. P. S.*—We do not know. The originator of the scheme was, we believe a Dr. Bonsall, but who he is, or as to where he resides, we are ignorant.

Books, Catalogues, &c.

WAX FLOWERS: How to Make Them. With New Methods of Modelling Fruit, Sheeting Wax, &c. Published by Tilton & Co., Boston. Philadelphia: J. B. Lippincott & Co.

We have had several occasions during the past year to notice works issued by Messrs. Tilton & Co. on various subjects connected with gardening and the adornment of houses and homes of taste. All these works are got up in beautiful style, well worthy of the subjects illustrated by them.

The present one is a worthy companion to the others, and will be welcome to every drawing-room. The design of the work is well explained in the introductory chapter, which we extract entire:

There are no imitations of natural objects more

exact and pleasing than those made of wax, more especially the representations of Fruit and Flowers. So exact, indeed, are they, that if well made, the most practiced eye cannot sometimes detect the real from the artificial.

In Fruit, the choicest specimens of every clime may be thus assembled in a single vase, in all their apparent lusciousness and perfection; while in their waxen prototypes, lovely Flowers may be viewed in all their gorgeous coloring and transparent delicacy. As ornaments to the drawing-room, when grouped with taste, and blended with harmonic contrast, these waxen objects are not to be surpassed, whether we look at them as records of foreign productions seldom seen,—of extraordinarily beautiful specimens of home-growth,—of favorites which it is desirable to preserve,—or merely as beauties of ordinary production, which the eye delights to rest upon. Indeed, all lovers of flowers (and who are not?) must admire these,—their lovely *images*, transparent, vivid, and brilliant as they are.

The chief thing is to know *how to select the proper materials, and how to set about the work in a proper manner*; and, it may be added, to commence with what is most easy. Should it be a fruit, let it be one of a single color,—as an orange or a lemon; or, if a flower, we might recommend a snowdrop, a violet, or a narcissus, in which there is no complexity, and little pencilling.

In our larger cities, the requisite materials can always be readily procured, and it is not worth while that any of them should be home-made; yet, as persons who desire to practise this art may live far in the country, where it is difficult to obtain even the simpler requisites; and, as circumstances often arise in which it is absolutely impossible to procure what may be wanted for a particular purpose, as in the case of a mould be required for a certain specimen of a fruit, or the extra thick wax desirable for particular flowers, &c., we intend to include in this, our little book, every available information; that the learner, however remotely situated may be his residence, or unique his model, may have as much as possible his difficulties removed, his mind stimulated, and his fingers directed to attain excellence.

Beginning with the easiest department, it is necessary to divide the subject into making of Fruit, and the making of Flowers. These are quite distinct in themselves; the former includes the imitation of all solid objects, with melted wax poured into moulds. The latter includes those more delicate ones, which are made without moulds, of wax previously cut into thin sheets.

Rare and New Fruits.

BEN DAVIS APPLE.—In the accompanying box you will find 12 specimens of the Ben Davis apple, which I think is by far the best apple for all purposes we have for this climate.

The tree is a free grower, with dark wood, much like the Winesap, but more erect and regular. Young trees in the nursery rows cannot be distinguished from the Winesap. It comes into bearing very young, and bears every year; as it is late about putting out, it is apt to escape the late spring frost.

With us here, almost in the land of cotton, it is difficult to get good keeping apples, particularly northern varieties: the Baldwin, Greening, Spitzenburg, and many other northern keeping apples, fall short here.

The Ben Davis, if handled carefully and kept from freezing, I am sure will keep until July, without losing ten per cent. The specimens I send you are about average size, of general appearance, but not of best quality; they have been frozen the second time this winter, and of course have lost their taste, and become dry and mealy. This is a good sprightly apple when it is in proper condition.

I received the grafts of this variety of Mr. J. S. Downer, of Elkton, Todd Co., Kentucky, not far from where the great battle of Fort Donnellson was fought, under the name of Ben Davis, and this seems to be the oldest title, and I think the name should be retained, instead of New York Pippin.—A. L. CALDWELL, Demossville, Ky. *May 10, '64.*

[We have nothing at the period of our writing this note, June 8th, equal in quality and beauty combined, with these apples from Mr. Caldwell. The reports we receive from all quarters, also indicate the Ben Davis as doing well in so many widely separated localities, that we expect to see it a powerful rival to many better known kinds.—ED.]

FRENCH'S SEEDLING STRAWBERRY. We have received a box of these from Mr. Nathan Leeds, of Cinnaminson, N. J. They are, in the first place easily distinguished from any other variety, by their light scarlet color and very small seeds,—two characters we do not now remember to be united in any other berry. We have never thought the flavor equal to some other berries,—but that is but one quality. Growth, productiveness, hardness, adaptation to varied soils, and many other points go to make up a valuable variety. We may say that it is a berry of fair size and flavor, firm, and a pretty

color, and from what we judge of these berries of Mr. Leeds, and some young plants growing on our grounds, we believe it will be found at least as valuable a variety as any of the new ones now offered.

HALE'S EARLY PEACH.—I send to you a few specimens of Hale's Early, also a specimen of Troth's Early Peach. The latter variety being the earliest and most valuable market peach known for the last fifteen years.

We now have the Hale's Early, produced by a German in Ohio, that ripens so long before the Troth's Early that it must prove of great value to the Peach-growers throughout this country, by adding some two or three weeks to the first part of the season. The fruit I send you I grew in my Orchard-House. I took great care to give both kinds an equal chance: I placed them side by side so that they should receive the direct rays of the sun alike. The difference as to time of ripening you can judge. The first ripe Hale's Early fell from one of the trees on May the 8th, and they have continued to ripen from that time till now, this being the last picking.—ISAAC PULLEN, Hightstown, N. J. *May 24th, '64.*

[The Peaches were superior, and fully sustained the excellent character of this variety we have so often given in our journal. It is undoubtedly the most valuable addition the Peach list has seen for a long time.—ED.]

THE BELMONT APPLE IN INDIANA.—The State Pomological Society discussed the merits of this apple. J. D. G. Nelson, of Fort Wayne, said it was almost uniformly fine, healthy and prolific, little disposed to rot, and that he regarded it as the best single variety with which he was acquainted. He said that, like most varieties, did better in the open air than in close confinement.

Genl. Orr said it had not done well in the north part of the State. It was often scabbed and specked. Still he regarded it as a good variety for a small orchard.—*Ohio Farmer.*

NEW ENGLISH PEARS.—In every new home-produced, robust or hardy variety of fruit, of good quality, which is originated, there is a clear gain to the Pomologist in the acquisition of a superior fruit especially suited to our climate. The value of the prize may not at first be fully realized, as it often takes time to develop all the good qualities inherent in a novel variety; but if the preliminaries we have mentioned are to be satisfactorily made out, the future becomes full of promise. We have re-

cently mentioned some fine new Pears of Devonshire origin, but there are others also of recent date, that deserve to be better known, on account of their intrinsic merits. One of them is the

British Queen—Raised by Mr. Ingram of Frogmore, and said to be a seedling from the Seckel crossed with the Marie Louise. This is a very fine looking Pear, and as good as it looks; it has been shown me on two occasions, and has invariably met with approval. The fruit itself is large and pyramidal, with an undulating surface, and smooth shining golden yellow skin, here and there freckled with patches of thin cinnamon russet, and on the exposed side often acquiring a crimson flush. In flavor it resembles Marie Louise, the flesh being fine grained and melting, with a rich saccharine juice, and fine aroma. As an autumn Pear, ripe in October and November, this has few equals.

Another to which we may specially refer, is the

Autumn Nelis—A variety raised by Mr. F. J. Graham, of Cranford, a variety of remarkably hardy character, and so compact and short-jointed in habit, that the branches become closely set with spurs. Indeed, the whole habit of the tree especially recommends it for culture as a pyramid, either out-doors or in the orchard-house. The fruit is rather above medium size, obovate-turbinate in outline, almost entirely russeted on a surface which here and there shows a little patch of greenish-yellow. The flesh is yellowish, fine-grained, and melting, with abundance of rich aromatic sugary juice, and an exquisite flavor, which has been compared to that of the Winter Nelis. The ripening season is October. The parent tree of this variety has been in bearing for some five or six years, and proves to be most prolific. We believe this is the same as a Pear which Mr. Graham exhibited before the British Pomological Society in 1858, under the name of Graham's Bergamot, when it was considered one of the most delicious of Pears, but that before being let out last year, it was rechristened Autumn Nelis.

There can be no doubt that these Pears, both of which have had First-class Certificates from the Royal Horticultural Society's Fruit Committee, are like Mr. Huxley's varieties, acquisitions of real merit, and as such destined along with them to occupy a prominent place amongst our hardy dessert fruits. It appears to us that the Fruit Committee would do well another year to include them in its list of prizes to be distributed on ordinary meeting days. They might be invited in the shape of pot plants grown in orchard-houses, for which the Pear seems very well adapted; and if young plants were invited, all growers would compete on equal terms, the

fruit being shown on the plant. It would add, we think, very much of interest to these meetings to adopt such a mode of familiarizing the public eye with the aspect of fruits so well deserving to be generally known.—*Gardener's Chronicle*.

New or Rare Plants.

ATHANASIA ANNUA.—We observe that one of the plants which the Horticultural Society's Floral Committee has approved, in its year's report on the experimental plants grown at Chiswick, is the *Athanasia annua*, an old-fashioned annual, which it is stated was very effective for a considerable period during the summer months. We saw these plants, and can bear testimony that such was the case. The subject is mentioned here for the sake of pointing out that the effectiveness of this *Athanasia* was, as is the case in so many other instances that could be named, owing entirely to good cultivation. Sown thickly on poor soil, as is the lot of too many of our annual flowers, the *Athanasia* is a mere weed; but here, transplanted singly into good soil, it formed a close mass, adorned with a profusion of its bright yellow flower-heads. The branching habit which the plant assumes under such treatment is highly favorable to the production of a succession of flowers. In the instance referred to, the individual plants formed dwarfish freely-branched tufts of about a foot in height, the ends of all the branches being decorated with a corymb of the peculiar rayless flower-heads. These are, as gardeners would say, all 'eye,' wanting entirely the ray-florets, which in general give their beauty to composite flowers; in point of fact, they very much resemble those of the Tansy, but from their bright yellow color, they are very showy when produced abundantly.—*Gard. Chronicle*.

DENDROBIUM LUTEOLUM (Bateman).—With the exception of a few reddish streaks on the lip, the flowers of this new *Dendrobium* are of a uniform pale primrose tint. Indeed, I should have called it *D. primulinum*, if that name had not been already appropriated to another and totally different species. The mentum (or spur) is about the length of the ovary, and is curved inwards. The flowers are about 2 inches across, and are remarkable for their straight margins or edges, which are not curled or curled, as in most *Dendrobium*; they are borne in short lateral racemes that come forth towards the upper (not the end) portion of the stems. With

me these racemes are two-flowered; but in a much finer specimen from Clapton, of which a drawing has been prepared for the *Botanical Magazine*, as many as four flowers appeared together, and possibly this number may be exceeded when the plant—which is of the easiest culture—has been longer established. Even now it is very ornamental. Its nearest affinity is with *D. rhombennu*.

Moulmein seems to be inexhaustible in new *Dendrobia*; Messrs. Hugh Low & Co. can already boast of having introduced nearly a dozen species that were previously unknown, among which the present is one of the most distinct.—*lb.*

NEW BEDDING GERANIUMS.—The following set of the late Mr. Donald Beaton's Geraniums are announced by the Messrs. Carter & Co.:

Cybister (Beaton).—This Mr. Beaton considered the best nosegay Geranium he had raised. For two successive years it was exhibited in the most prominent beds at South Kensington and the Crystal Palace Gardens, and universally admired. The color of the flowers is vivid scarlet; the trusses are immense, with sometimes 200 flowers and pips on a truss; its habit is excellent.

Lady Colum (Beaton).—This is the first and only nosegay Geranium of the Christine color, viz., delicate rose; the blooms are well thrown up above the foliage, which is slightly zonale; the flower trusses are very large, and freely produced. During the last season at the Crystal Palace, it was grown in the circular basins surrounding the Crystal Fountain, where it was very effective; it is also well adapted for Greenhouse or Conservatory culture.

Beaton's Pet (Beaton).—This was a great favorite with the late Mr. Beaton; it is minimum in growth rarely exceeding 6 or 8 inches in height; it is also a most profuse bloomer, with a peculiar crimson lake color, exceedingly rich and glowing; for ribbanding and general bedding purposes it will be found very effective.

Mrs. Whitty (Beaton).—Helen Lindsay was universally admitted to be much superior to the general favorite, Christine. A still finer variety is *Mrs. Whitty*. It has a beautiful deep rose color, with a large white eye; blossoms in profusion; foliage slightly zonale. Last season a bed of it at the Crystal Palace Gardens, planted at the special request of Mr. Beaton, produced a magnificent effect, and continued in bloom till the frost.

Monitor (Beaton).—This is a remarkably fine variety, from which Mr. Beaton hoped ultimately to produce a yellow Geranium, a color hitherto unknown in this tribe of plants; color a deep orange

scarlet; bloom freely produced, and well thrown up above the foliage.

Snowball (Keeler).—A new pure white bedding Geranium, raised by Mr. Keeler, of Wood House, Dulwich. Of the same type as *Madame Vaucher*, but in every respect superior; fine large truss, well up in the centre, giving a flat even surface, and both in form and color almost equal to the old Double White Camellia. Petals pure white, good form, and of great substance. Habit very robust and compact. Foliage rich green, with dark zone; will form a most desirable pot plant for Conservatory, and is without doubt a valuable acquisition for general bedding purposes. It is the opinion of Mr. Keeler, the raiser, that it is superior to any thing yet introduced to the notice of the public, and the best White Geranium ever raised.

Bel Demonio (Keeler).—A bright lively salmon color, of dwarf, compact, but very robust habit of growth. The free blooming habit of this variety will make it most desirable for planting in large masses or extensive riband lines. The trusses are very large, individual flowers large and of uncommon substance in petal, and blooms well up above the foliage. This variety resists the effects of sun and rain better than any before offered of this class, and was raised at the same place as the preceding splendid White variety.

Hibberd's Pet (Hibberd).—This one may recommend as the best scarlet Horse-shoe Geranium in cultivation: it is a strong grower, and throws up large trusses of bloom, slightly darker in color than Cottage Maid.

Messrs. C. & Co. have also now in full bloom quantities of the showy early flowering bulb, *Ornithogalum thyrsoides*, the great conical shaped snow-white flower, heads of which, borne well up as they are on stout stems, are conspicuous even at a distance, and, intermixed with other plants on a greenhouse shelf, have a fine effect.

Among bedding plants, of which Messrs. Carter have many thousands now out of doors hardening off for flower-garden decoration, consisting of variegated and other Pelargoniums, *Lobelia speciosa*, *Verbenas*, *Gazanias*, *Calceolarias*, etc., was a golden variegated Balm, which, in the formation of ribbons, cannot fail to be useful; it is very hardy, and some situations might be quite as effective as Golden Chain Pelargonium.—*Gard. Chronicle*.

BEGONIA MANNII (Mr. Mann's Begonia).—One of the Begonias with wingless flowers. Native of Fernando Po, at an elevation of about 1300 feet. Flowers rose-colored.—*Bot. Mag.*

Domestic Intelligence.

HORTICULTURAL DEPARTMENT OF THE SANITARY FAIR.

Philadelphia has made a great effort to maintain her horticultural supremacy on the occasion of the great Sanitary Fair, and with such success that we are sure we shall please our readers by giving some detailed account of this department. Every one throughout the country is more or less interested in the getting up of agricultural and other fairs and exhibitions, and the hints afforded by any successful one are always read with profit. In addition to what we give in the following report, and for which we are indebted to G. W. Childs, Esq., Chairman of the Publishing Committee, and which is taken from the *Daily Fare*, for which paper the report was prepared by one of the reporters of the *Gardener's Monthly*,—we may say that the Horticultural Department has played no small part in ensuring the success of the Great Central Fair.

Although 25 cents extra was charged for admission into the Horticultural Department, at the time of this writing, the Fair being only half over, 75,000 persons have paid this extra charge, and over 300,000 (season tickets and others) have been admitted. Probably 500,000 persons will have visited this department before the fair closes,—perhaps the greatest number of persons who ever entered a strictly Horticultural exhibition since the world began:

“Next to the Art Gallery, there is no more beautiful display than that made in the Horticultural Department, where nature and art have combined to furnish a magnificent exhibition. With many visitors, the horticultural display ranks above that presented in the Art Gallery, and we have no reason to quarrel with the decision. Nothing like it has ever been seen in this country, and to all visitors it must be a matter of profound regret that such a fairy creation will soon pass away from sight forever.

The visitors upon entering the rotunda, have spread out before them a rare display of plants, fruits and flowers, arranged with faultless skill and taste, and intermingled with these are waving banners, tinkling fountains, and beautiful ladies in attendance upon the tables. Treasures drawn from every clime have been compelled to do the bidding of the goddess Flora, and here in her beautiful court, she holds high carnival. Her subjects are numbered among the thousands, and are among the most devoted of any earthly potentates. She

here proves herself worthy of the homage drawn from her admirers, and to those who have reared this temple for her short-lived abode among the mortals, she owes a crown of glory fragrant and ever bright as the flowers that surround her temporary throne.

What description shall do justice to the scene? The pen refuses to do duty, and words fail to convey to the few unfortunates who have not seen the unparalleled richness of the collection, and the exquisite taste of the decorations of the Horticultural Department. Fancy a rotunda 190 feet in diameter, filled with rare plants and flowers, arranged in a succession of circles, through which visitors pass and re-pass, drinking in the fragrance of the perfume of the orange tree and the palm, the banana and the magnolia. From the lake, in the centre of this fairy palace, is the Island, with its fountain of hundreds of jets, brilliantly illuminated at night, and a thousand burners of gas, and thus intermingled with all that is sweet and beautiful in the Floral realms, comes the soft music of the band, hid from sight by the dense foliage of the Island.

The fountain is worthy of its surroundings. Around the base of a vast pyramid of exotic plants, rising up in air, flows the crystal brook, bordered with grassy banks and bearing on its bosom lovely water blossoms, and the broad green leaves of the *Victoria regia*, while from its depths burst forth, at intervals, delicate fountains of quaint and various designs. From the summit of the pyramid of plants there falls on every side a dome-like sheet of water, covering the whole as if with a great bell-glass. On the outside of this, and below the circle of water-jets is a circle of fire—a jet of flame for every one of water. The effect of this arrangement of fire and water is indescribable. The thousand fantastic colors sent forth must be seen, and when seen will never be forgotten. Every drop of water becomes a jewel.

The circular pond or brook which surrounds the pyramid of plants is about fifteen feet in width and three hundred feet in circumference, and is filled with water plants and every variety of aquatic decorations. Twenty-four small fountains play from it; some spouting from the mouths of swans, others revolving in circles of spray, and others mounting gaily in feathered jets. Spreading their great leaves on the surface of the water, are several plants of the *Victoria regia*; and numberless ducks swim about as naturally as if they were alive. The pond is bordered by a circle of smooth green sward, three feet wide. The central pyramid rises thirty feet high, and is of proportionate diameter at the

base. It is formed entirely of tropical plants, contributed mainly by Mr. James Dundas, and arranged by his skillful gardener, Mr. Pollock.

Among the vast mass of foliage and blossom which forms the most attractive feature of the department, may be named the following plants: The *Date-palm*, rising high above all; the *Dragon-tree*, from which is obtained the extract of Dragon's-blood; *Tree Ferns*, from Australia; the great *Brownia grandiceps*, from India, of which there is only one other specimen in the country; a well-grown *Camphor-tree*; the *Bourbon-palm*; two *Bananas*, in full fruit; the *Heparusa longifolia*, a splendid plant; many *Rhododendrons* and *Pomegranates*, and a fine *Indiarubber-tree*. At the base is a circle of *Zebra-plants* and handsome *Caladiums*. There may also be seen in the pyramid a *Norfolk Island Pine*, some very fine *Pitcher plants*, and the *Madagascar Lice-plant*. Around the border of the pond are vases containing rare plants, such as the *Diffenbachia picta*, discovered by Humboldt, and a variegated *Pineapple*; whilst over these hang baskets containing *Orchids*, or air plants, some of them very beautiful.

The upper ring of water jets, which surmounts and crowns this pyramidal group, is fifteen feet in diameter, and contains one hundred and fifty jets. The circle of gas pipe below is fifty feet in diameter, and contains one hundred and fifty burners. Among the foliage in the central group are statues, from Mr. S. E. Harrison, and deer, etc., beautifully cast in iron, and contributed by Messrs. Wood & Perot. These gentlemen also furnished the arrangements for the fountains in the pond.

The plants on the island are so arranged as to leave space for the accommodation of the orchestra, which is thus entirely concealed from view, adding greatly to effect of the music. Access to the island is had by a beautiful rustic bridge of graceful design.

The Horticultural Hall is one hundred and ninety feet in diameter, and is surmounted by a canvas dome eighty-five feet wide at the base. There are two circular rows of tables, the outside one against the wall, with sixteen tables twenty-five feet long and five wide. Then we have a circular passage-way twenty-five feet wide and five hundred and fifty feet long, overhung with a vast ring of gas-pipe, containing five hundred and fifty burners. The inner circle of tables is twelve feet wide, with a passage in the middle of it for the ladies in attendance. The passage round the fountain is twenty-five feet wide, and on its outside circumference are fifty columns, each ornamented with two gas-

burners. On the inside of the outer passage-way are also fifty columns. Between each two of these pillars are festoons of evergreens and hanging-baskets, and the columns themselves are clothed with laurel, hemlock and pine boughs, brought from the Alleghany Mountains.

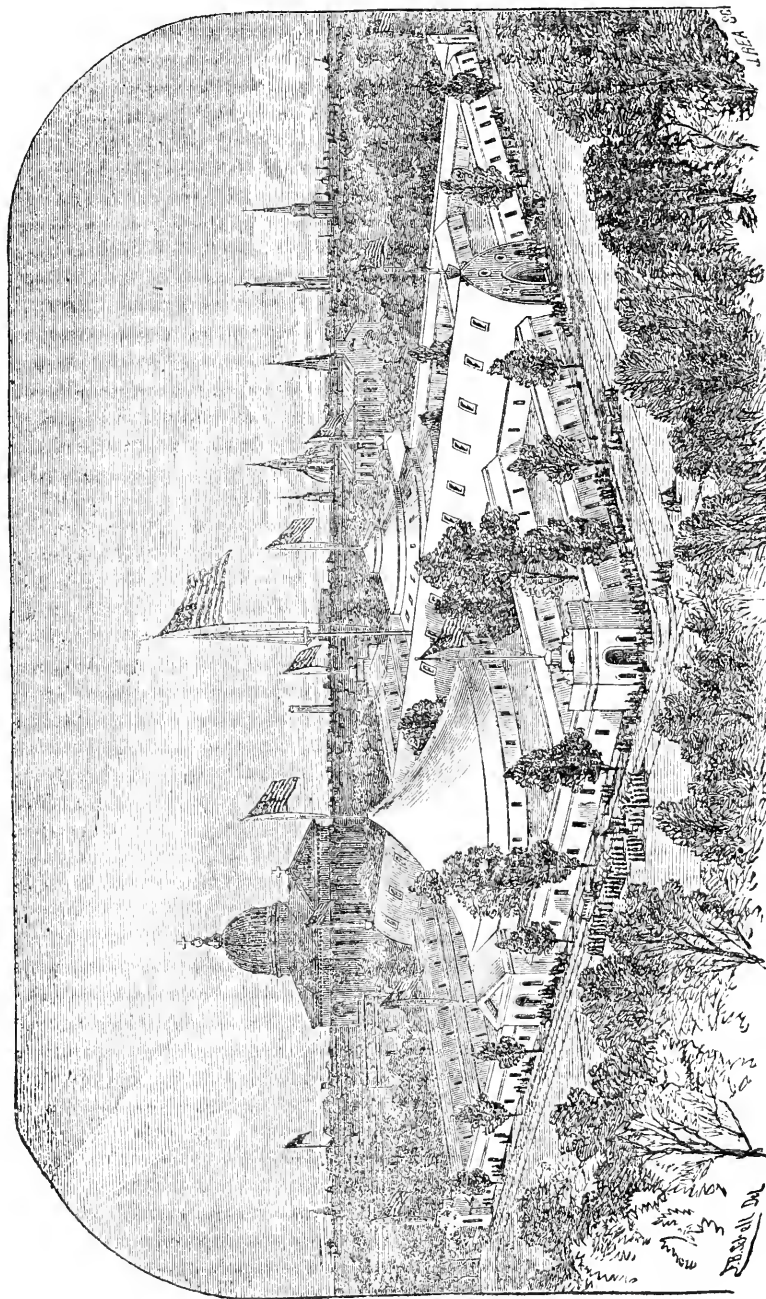
Around the base of the canvas dome are fifty flags of different nations, and on the columns hang one hundred shields, bearing the coats of arms of various nationalities, and painted by the artist Grain. Bunting is effectively draped among the columns, and the *coup d'oeil* of all this color and graceful design is charming in the extreme.

The collection of plants and flowers is worthy of an extended notice. And first, upon entering, a number of fine aloe and date-palms, from the collection of Mrs. George W. Carpenter, will attract attention. The two tables belonging to Fairmain Rogers, Esq., are under the charge of Mr. Hibbert, his gardener. Among the very many rare and well-grown plants are the *Pandanus javanicus*, the *Davallia elegans*, many fine Gloxinias, among which are the fine varieties, *Mrs. Fisher*, *grandiflora alba* and *imperialis*; the *Dracena ferrea*, brought first from China in 1771; the *Caladium Chantinii*; the *Dicksonia antarctica*, from Van Dieman's Land; the *Pteris tricolor*; the *Maranta bicolor*; golden and silver *Ferns*; the new plant, *Cyperus alternifolia variegata*; the *Magnolia pumila*, from China; the *Tradescantia discolor*, brought from South America in 1783; the *Croton variegatus*, from the East Indies; the *Cyrtocerus reflexa*, from Japan, which is a perennial bloomer, and many more worthy of notice.

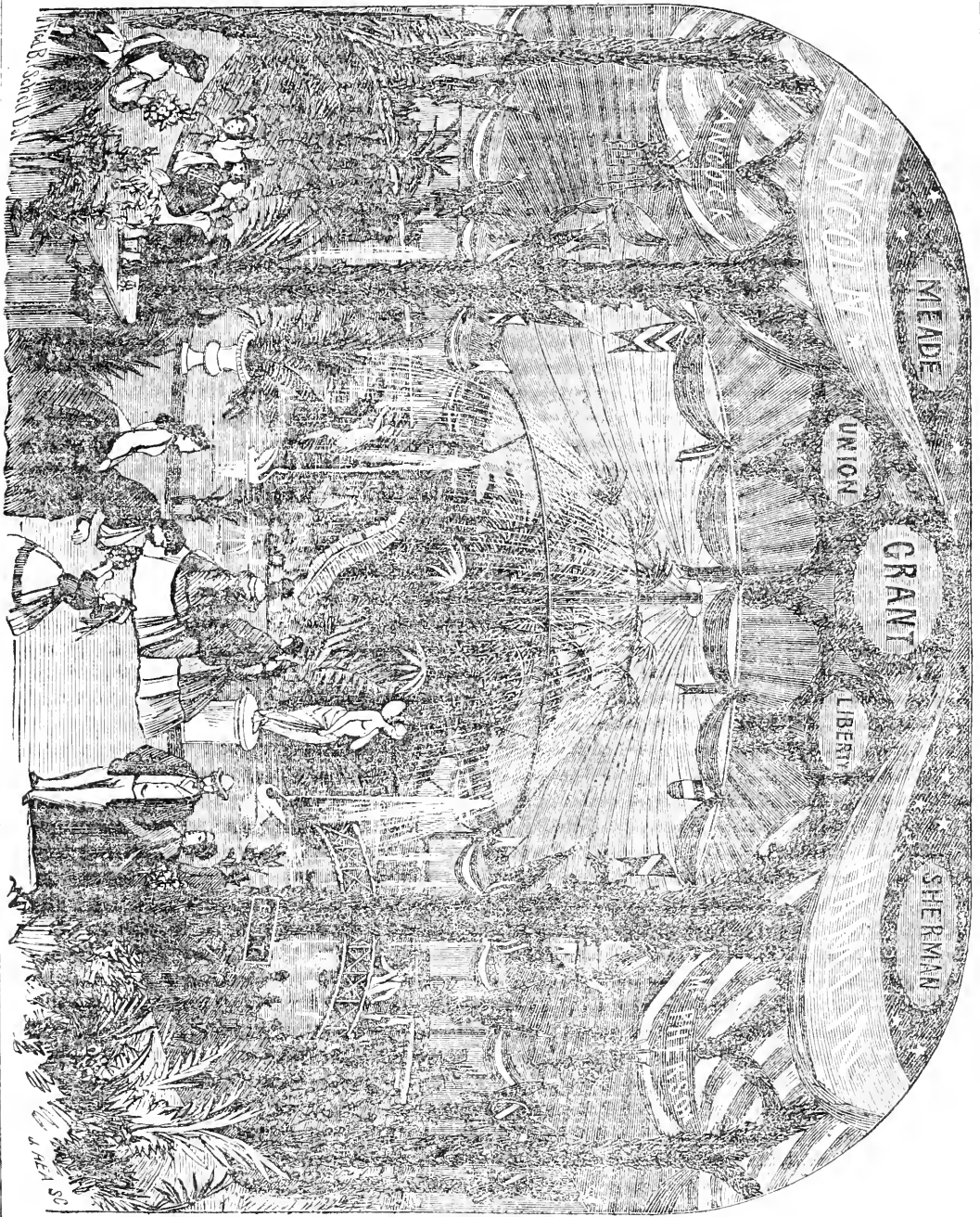
The table occupied by plants belonging to Mr. Joseph Harrison, is under the care of Mr. Francis O'Keefe. Mr. Harrison exhibits the *Auracaria excelsa*, a remarkably fine plant. The value of this specimen is about \$500. Also a *Ficus elastica*, or Indiarubber-plant, very ornamental and striking; the *Sonnerilla margaritacea*, which is an extremely beautiful plant, with spotted leaves, and is under a bell-glass; a fine specimen of *Latania Bourbonica*; a splendid fern, the *Blechnum Braziliensis*; also, a fine collection of Begonias, and by far the best show of Lycopodiums in the exhibition—one of these, the *L. lepidophylla*, is under glass.

He also has, above the table, in a hanging basket, a *Ficus repens*, in the shape of a wasp's nest.

On the table devoted to the collection of Mr. H. A. Dreer, there is an admirable collection of lycopodiums, caladiums, ferns, fuchsias, colens, begonias, calceolarias, and a fine *Australian Pine*. This collection is all in that admirable condition in which



[VIEW OF THE FAIR BUILDINGS, TAKEN FROM THE NORTH-WEST CORNER.]



THE HORTICULTURAL DEPARTMENT.

Mr. Dreer's plants are generally found. Next to Mr. Dreer's collection, are two of the famous Longstreth Hives, exhibited (and presented to the Fair), by Mr. John Turner. In one is a new swarm, and in the other the full crop. This latter hive yielded last year between sixty and seventy pounds of honey. Mr. Turner's success and liberality entitle him to honorable notice.

The adjoining two tables are covered with plants from the splendid collection of Mr. D. R. King, Chairman of the Horticultural Committee. These plants are all tropical, and extraordinarily well-grown. Here is a very fine *Billbergia rosea*, a *Draecena terminalis*, a *Maranta regalis*, and a *M. zebrina*; many Begonias, among which is the fine variety *B. rex*. Also, fine plants of the *Cropana dactylofolia* and *Strelitzia regina*. This gentleman has also some fine plants in the central pyramid.

Mr. M. W. Baldwin has two tables, presided over by Mr. William Joyce. Here are fine Orchids, or air plants, *Cattleya mossie*, *Caladium bicolor* and *argyrites*, a fine *Bourbon palm*, and a fine plant in bloom of the curious species—the *Oncidium papilio*, or butterfly orchid. The collection of Caladiums on this table is remarkably fine.

The next is a supply table for the sales apartment. Adjoining it is one filled by Messrs. Wright, of Germantown, and Fergusson, of Laurel Hill.

Among the plants on Mr. R. Buist's table, we notice the *Croton variegatum rubrum*, many fine Acacias and Gloxinias, the *Pandanus javanicus*, the *Ananassa variegata*, the *Pavetta Bourbonica*, and the *Doryanthus excelsa*. This display is rich and full, covering two large tables.

Mr. Joshua Longstreth has a fine display of large plants; and next comes the table of Messrs. Peter MacKenzie & Son, with its display of fine things, *Dragon trees*, with their rich, red leaves, *Cinnamon trees*, the real *Sugar cane*, the *Fuca variegata*, *Japan Cedars*, variegated Hydrangeas, the *Auricularia Braziliensis*, or Brazilian pine, and Acacias, Ivies, &c. Messrs. MacKenzie have many plants in hanging baskets, etc., all over the hall.

Mrs. George W. Carpenter has some remarkably fine Palms, Pines, etc., in tubs, distributed in various parts of the hall. Some of these are in the central pyramid.

The "Flower Market" is another feature of this Floral Temple. Here cut flowers and plants are daily furnished by liberal citizens, and no matter how large the contributions, nothing remains at the close of the evening. Mr. J. E. Mitchell, Chairman of the Committee on Arrangements and Deco-

rations, has had charge of the Flower Market, and, with his usual taste and liberality, he has not permitted any other portion of the Horticultural display to exceed his own special department.

The entrance to the "Market" is through three arches with doric columns, and the inscriptions over the arches are in English, French and German—FLOWER MARKET; MARCHE AU FLEURS, and BLUMEN MARKT. The exit for the market has rustic arches of ornamental design.

(To be continued.)

EVERGREENS FROM DECIDUOUS TREES.—A correspondent of the *Maine Farmer* says, while travelling in Canada, in November, 1862, in some locality, which he does not give, he was surprised to see shade trees around the houses in full leaf, apparently as green as in June. On inquiring the cause, he was informed it resulted from inserting a piece of pork rind in the tree the spring previous. He asserts that he tried the experiment on a single tree last spring, by boring into it about five inches with a 2-inch augur, and lining the hole with pork rind. His letter is dated March 10th, 1864, when, he says, "this tree retains its leaves and the same general appearance as in June." The article is entitled the 'Sugar Maple Evergreen,'—*R. N. Yorker*

[A friend at our elbow says a much better way to accomplish the same purpose, is to insert a portion of the tail of a bullfrog.—*Country Gent.*]

[Our printer's devil—a very malicious devil by the way—suggests that if by any process a portion of the brain of some correspondents could be inserted in the trunks of the Maple, the 'greenness' would be considerably intensified.—ED.]

VEGETATION IN THE MOON.—Upon the growth of plants the moon exercises a remarkable influence. The chemical action of light is necessary to their principal work, the absorption of carbon from the carbonic acid gas of the atmosphere. This work all plants carry on during the day, and in the night they sleep—except when the moon shines. She wakes them and sets them at work. So the farmers who plant only just before the full moon are right, and the scoffers who call them superstitious, are themselves the foolish ones. For, if sown before or near the new moon, the young plants get above ground just at the full, when the tender things need sleep. But if sown just before the full, they come up about new moon, pass by their babyhood under the soothing influence of dark nights, and when the full moon comes, are sturdy urchins able to work night and day.

Webb, after a careful comparison of the present appearance of the moon with the very precise maps made by Madler some twenty years ago, has shown that there have been considerable changes. Some of the small craters, in particular, have a notably different form from what they had when Madler observed them. These changes show the existence of water and an atmosphere. Father Secchi, Director of the Roman Observatory, after much observation, has come to the conclusion that the peaks of the highest mountains on the moon are covered with snow. And, to make us still more at home on the moon, De la Rive, the owner of the observatory at Crawford, near London, gives it as his opinion, that what were at first marked down as seas, and afterwards supposed to be barren plains, are in fact extensive forests. In support of this comes up a great astronomic authority—Schwabe, the discoverer of the periodic times of the sun's spots. Besides these great smooth plains, which were called seas, there are a number of furrows and wrinkles, nearly a hundred, the nature of which is entirely unknown. Their length varies from three to thirty-five miles, and their greatest breadth is about five thousand feet; most of them are considerably narrower. Their sides are parallel, and smooth; some are run in straight lines, and some are gently curved. Ordinarily they are separate, but sometimes they cross craters, but occasionally they seem to be cut off by them. They are found all over the surface of the moon, except on the mountain chains.

Of these furrows Schwabe has made careful study at various times. He found them to consist of very fine parallel dark lines, separated by clear spaces. A few months later, the lines of streaks had disappeared, but after a little while they returned, again to disappear. In this periodic change he thinks that he finds proof that these lines are rows of trees, and the clear streaks between them is the bare ground seen when the trees are leafless; when the trees are in full leaf, the ground is so covered as to produce a uniform shade, and the lines disappear.

Nothing is more natural than to suppose that the dark spots on the moon are forests; but how shall we account for the growth of these trees in right lines? This hypothesis we must for the present consider to be only a hypothesis. With the aid of photography, which will secure for us accurate pictures of the moon from time to time, we may hope that the question will be solved, and that we may really find out what is going on upon the surface of our satellite.—*N. Y. Tribune.*

Obituary.

REV. CHAUNCEY E. GOODRICH.—The Utica papers announce the death of this gentleman in that city. To the agricultural interest of the country the death of Mr. Goodrich is a public loss. His labors in a special branch of improvement have been so perseveringly and so intelligently directed as to lead to important and valuable results, and the country at large has had the benefits of these labors. In the early stages of the potato disease, Mr. Goodrich, then, and for many years since, Chaplain of the State Lunatic Asylum at Utica, entered upon a series of experiments and a thorough investigation of the causes of that great calamity to the agricultural interests; and he has pursued these investigations under circumstances the most discouraging, for a period of a dozen or fifteen years, with most extraordinary results.

Mr. Goodrich has produced, during his experiments, many new varieties of the potato, some of which have proved of great value to the country. These have been widely disseminated, and have proved exceedingly useful. As is usual in such cases, the benefits have inured to the public, while the benefactor has suffered loss rather than derived advantage from his labors.

During the meeting of the State Agricultural Society, at Albany, a public recognition of the services of Mr. Goodrich in the cause was tendered, in the form of resolutions, and a testimonial, by subscription, amounting to several hundred dollars; a mark of approval which must have been peculiarly grateful to the recipient in the decline of his health and of active effort.

When the history of American agriculture shall be written—if such a work shall ever be undertaken—justice will be done to the labors and efforts of Rev. Chauncey E. Goodrich.—*World.*

Foreign Intelligence.

ORIGIN OF SPECIES.—Mr. Darwin, not content with astonishing naturalists of an older school with his views of species, is getting them into trouble with their views of genera also. He has recently proved that *Cotussetum tridentatum*, *Monachanthus viridis*, and *Myanthus barbatus*, were all originally the same plant.

THOUGHTS ABOUT VARIETIES.—In 1853 I raised a number of seedlings from the pips of Pears, selected from four varieties acknowledged by all pomologists as being quite distinct from each other. They were our old Poire d'Angleterre, which every knows; the Bose, the form of which is like that of a longish gourd, with the skin of a uniform cinnamon color; the Belle-Alliance, a dumpy pear with a yellow and red complexion; the Sauger, a wild variety, or nearly so, and which was so named from its foliage resembling in its white woolliness the common Sage. The batch of seedlings of the last were all raised from a tree which grew by itself on the road from Marcoussis to Gué. The pips of these Pears came up the same year as they were sown, whilst those of the Poire d'Angleterre did not appear till the following year, and that in two different sowings, without my being able to account for it. Very few of these trees have begun to bear fruit, which I regret, because the result with which they would have furnished me, if all had produced fruit, would have been more varied, and, for that reason more conclusive than what I am now able to place before the Academy. The first glance at the colored figures now produced shows how much the fruit, in each case, has already changed from the original; thus in the Sauger, four trees which have borne fruit have given four different forms; one egg-shaped and entirely green; a second dumpy and almost apple-shaped, red and green; a third, still more depressed; and a fourth regularly pear-shaped, twice as large as the preceding ones, and of a uniform yellow tint.

From the Belle-Alliance have come nine new varieties, none of which resemble their mother, either in form, size or color, or even in the time of ripening. To two of these I wish to draw attention, one for its size, which is double that of the Belle-Alliance, the other for the dumpy form, which imitates the apple-shaped Pears. In like manner the Bose produced three new fruits of very different type, one resembling so much one of the forms obtained from the Sauger as to be scarcely distinguishable. The variations of the Poire d'Angleterre were not less remarkable; from six trees which have fruited we had six new kinds, all as different from each other and from their mother, as she was from the greater part of our old varieties; one of the plants even produced winter fruit similar to the Saint-Germain. It is not only in the fruit that trees raised from the same seed differ, it is also in their time of ripening, general appearance and the form of their leaves. These differences are striking when the trees are seen growing together

in the same border. So many trees, so many different appearances. Some have spines, some have none; some have slender wood, in some it is stout and coarse. Upon some of the seedlings from the old Poire d'Angleterre, the variation went so far as to produce lobed leaves, like those of the Hawthorn or *Pyrus japonica*. Every thing varies in the Pear tree, even to its sap. As proof of this, observe the very different success of the graft, according to the stocks employed. All the varieties and races of Pear trees bear grafting upon a Pear tree, that is to say upon the wild Pear tree; but all will not take upon the Quince; as for example, the Rance, Clairgeau, Bose, Duchesse de Mars, &c. When it is desired to keep these trees dwarf, which can only be done by employing the Quince stock, the latter must be first grafted with Belle-Angevine, Jarmienne, Crassane, Sucré-vert, or any other that will do on the Quince; and then the first grafts may be successfully regrafted with the sorts whose sap will not agree with the Quince. This operation is known and practiced by all nurserymen. The relative size of flowers and the appearance of the foliage present a not less striking variation. Certain sorts, such as the Catillac, Saint-Gall, Gnoeco, Epargne, the Poire de Vallée, have petals very much rounded and waved, a corolla from 5 to 6 centimètres wide, and their wood when young as downy as that of the Sauger; later in life they lose this peculiar woolliness. Others, such as de Héric, Sylvange, Fortunée, &c., have oval or lanceolated petals, with flowers only half as large as the last. Finally, I have seen in the collection of M. Jamin-Durand, a Pear tree which by mistake bore the name of Chartreuse, whose linear-lanceolate petals were not more than 3 millimètres wide by 9 long.—M. DECAISNE, in *Proceedings of French Academy of Sciences*.

PEACHES IN JAPAN.—Thomas Hogg, in the *Horticulturist*, writing of the fruits of Japan, says of the Peach there:—"Although of fair size and appearance, they are inferior in flavor. This may be partly attributed to the practice of picking all their fruits in a very green state. No fruit suffers more from this treatment than the peach."

THE CANADA THISTLE AT RED RIVER.—This nuisance has become so prevalent and so serious in the Red River Settlement, that the *Nor' Wester*, of March 31st, devotes its leading editorial to a discussion of the question what shall be done. The article is headed, "Shall the Settlement be Abandoned?" and the statement is made that the evil

has assumed such proportions as to "menace the existence of the Settlement." The editor says:—"We have heard of some who are convinced they cannot on this account remain on their farms more than a year or two." The *Nor' Wester* strongly urges upon the legislature of the colony the passage of a remedial measure forthwith.—*Canada Farmer*.

MODERN GARDENING.—Horticulture is no longer what it formerly was; that is to say, a blind practice turning constantly in a single circle, composed of Auriculas and Tulips, and Anemones and Pinks, and such like. The circle is greatly enlarged now; it is so vast and so extended, and comprises so many different genera of plants, and so many plants from different countries and different latitudes, that the art of gardening rests upon a basis essentially scientific. In reality all the sciences, physical and chemical, as well as natural, come to its aid, but that which rules all the others by its essential qualities, that which is the basis of all culture, is in reality, the science of Botany, with its theories, its facts, its hypotheses, and its laws. It is upon the observation of physiological facts that horticultural science is based. To claim in our days the rank of a true amateur of flowers, it is necessary to understand wonders: to know the familiar structure of the organs of plants and their functions, to possess some idea of the mechanism of their life, and of their nutrition and fecundation, to be able to account for the phenomena of respiration, and of the sleeping and awaking of plants, and lastly, to know something of their stations and habitations, and of the laws according to which they are distributed in the different regions of the earth.

These few words will suffice, I hope, to make it understood that botany has now become an indispensable science for cultivating with intelligence and success the numerous plants imported into Europe from all parts of the world. Botany, has, besides, many attractions, and acquires every day a new importance by its numerous relations with the philosophy of the man of nature. Let us then be thankful to the many distinguished botanists who, notwithstanding the distance and fatigue of the journey, have not feared to come to us, to initiate us in the mysteries of vegetation. Let us address to them a sincere and cordial welcome; let us congratulate them, or it would be better to say, let us congratulate ourselves on seeing them among us; for they come to establish between horticulture and botany an intimate and indissoluble bond.—*Address*

of M. VANDENHENLL, before Hort. Congress at Brussels.

THE INK PLANT.—A plant with very curious properties, under this name, has been introduced into English gardens. It is the *Coriaria thymifolia* of botanists.

THE TALLOW TREE.—*Stillingia sebifera* of botanists, is one of the most valuable of trees. In the Island of Chusan, large quantities of oil and tallow are extracted from the fruit, which are gathered in November and December. The tallow is steamed off, and the oil extracted from the dregs by pressure. The tree is quite hardy in the Southern States of the Union, and, would probably do well much farther north than it has yet been tried.

HOLLYHOCK SEED.—Double Hollyhocks give plenty of seed; and the plants raised from well-saved seed come pretty true to the parent. Take off the pods when ripe, and hang them in bunches in a dry room till March, then rub them out, and sow in shallow pans in a gentle heat. Cut down the stems as soon as you have got as much seed as you require, and apply no mulching till spring: for damp at the collar often causes the destruction of hollyhocks in winter.

SCANDINAVIAN FENCES.—The sort of fence in general use along the roadsides is of a peculiar kind, differing from what is generally in use for that purpose in middle Europe. It consists of Spruce Fir trees, split up roughly into triangular pieces, which are placed at about an angle of 45°, with one end sunk slightly in the ground, and so close as to prevent hogs or lambs from getting through them. The whole is then bound with two or three lines of withes, of twisted Spruce Fir, Birch, or Willows, at certain heights from the ground; and in this was a formidable fence is constructed, difficult to get over, as well as sufficiently open to permit the snow to blow through it.—D. MOORE, in *Proceedings of Royal Dublin Society*.

AN ENGLISH NURSERY.—*Backhouse's Nurseries, York*.—Leaving the first group of houses, a short glazed verandah conducts us to a range 160 feet long, chiefly occupied by a general collection of greenhouse plants, vines, succulents, etc. In a large house, devoted to the culture and raising of Vines, a fine stock of *Schizostylis coccinea*, the first representative of a new genus, imported by Messrs. Backhouse under the name of a 'new scarlet Trito-

ma,' and recently figured in the *Botanical Magazine*, was coming rapidly forward. If it should prove hardy, which was confidently expected, it will be a great acquisition to the out-door as well as in-door department, flowering as it does at a time when brilliant things are scarce or absent. Here also were many fine flowering bulbs of *Gastronema sanguineum*, a new and handsome bulb from South Africa, with orange-red or scarlet blossoms 3 to 4 inches across. Another house, used for Vines during the early part of the year, contained a lot of Agaves, Yuccas, and such plants, amongst them a fine specimen of *Yucca filamentosa variegata*, with *Y. tricolor*, *quadricolor*, and others, *Agave schidigera* and *filifera*, etc., the whole mixed up and contrasting well with the commoner forms of vegetation. The greenhouses were filled with *Ericas*, *Geraniums*, etc., clean and well done, but with nothing among them claiming special notice, except perhaps a lot of fine specimens of *Shanghai Palm* interspersed. This is an interesting plant, from the strong probability of its adding the Palm to the garden landscapes of Britain. If living in the contumacious clay of north-western London for the past four years without a rag of protection of any kind, be a proof of hardiness, *Chamærops Fortunei* is certainly so. A young plant survived with the Messrs. Backhouse, when the thermometer fell nearly to zero several years ago, but was killed the following year by being 'protected' with Spruce Fir boughs: not being able to bear the moisture and cold combined, though the temperature was not so low by 10 or 12°.

Having 'passed on' through the principal houses, the next movement was in a downward direction; along a winding passage terminated by a rustic doorway, and opening into the subterranean glen or partly filled crevasse, known as the 'Trichomanes house,' which, from its unique design and arrangements, and the wonderful collection of *Trichomanes* and *Hymenophyllums* cultivated therein, is without doubt the most remarkable and interesting garden structure in England at the present moment. 120 tons of rough sandstone were used in its construction; and though in many parts the huge rocks overhang—though every variety of inclination is presented by them—though the whole thing is of recent origin—yet, without the aid of bricks or cement, so naturally and safely are they placed, that one fancies the scene a mountain rent through which the water had trickled for ages. The rocks reminded me of those under which I had crept years ago on the shattered sides of the Scalp Mountain in Wicklow, and one can fancy some

such 'covered way' being found there, were the opposing sides of that curious mountain to meet from depression.

The ground plan is in the form of an irregular horse-shoe, one limb being for the species of *Trichomanes* and *Hymenophyllums* from cool regions, and the other for tropical species. The two divisions are not separated by any door, but a huge stone drops across and forms a low rude rocky arch, which is so placed that its summit is only a few inches higher than the ascending floor at the further extremity of the warm division, thus preventing the escape of the heated atmosphere till the whole of that portion has been charged with it. A still more remarkable effect is produced by this arch in generating atmospheric currents—and not more remarkable than valuable; for to this cause must be attributed to the great success of the house. It will at once be seen that two atmospheres of different temperatures and degrees of moisture cannot remain quiescent. The warm and moist air admitted from a heated tank (thoroughly concealed) at the furthest extremity of the warm division, rapidly passes towards the arch, filling that division from its roof downwards. A cool current underneath the other, in the opposite direction. This in passing condenses the vapor of the upper warm current in so remarkable a manner, that every thing within the range of that current is incessantly covered with dew. And such dew! every Fern, nay every pinnule, and every particle of moss was radiant with tiny drops that glistened like polished diamonds and emeralds, for the reflection of light—now green, now gold—on these living gems was wonderful. And yet this moisture, incessant day and night, scarcely touches them. They would not bear it, so delicate is their texture. It stands upon their tiny hairs, hardly touching the real substance of the frond. Even the sprinkling of the finest watering pan or the thinnest misty spray is too much, so admirably are their delicate forms fitted by the hand of the great Creator to be nurtured by evening dews, and defended by the deep recesses and intense shade of tropical forests from the storms and tempests which abundantly assail the elevated and robust forms of vegetation. In this house they have 'a little world of their own,' with its 'equatorial and polar currents' constant in their operation. Close the arch with a door, and the spell would be broken; atmospheric motion, always so valuable to vegetation, would be stopped, and the grand condensing process ruined.

As before stated, the entire structure is underground, 9 to 10 feet deep and very narrow, the

cooler division being in some places considerably deeper and lower than the warmer. Iron bars span the chasm, bearing the large slabs of thick glass which form the roof. The top is of course the only surface exposed to the influence of frost, and that danger is obviated by the introduction, just under the glass roof, of a common drain pipe, connected with the open air space round the boiler, by which means a thin and slightly warmed stratum of air is diffused just under the only place where frost could otherwise enter. The floor is formed of rough slabs of stone, and is always moist from the percolation of water by natural drainage among its fissures. In rainy weather the whole house filters water from its rocky sides, and the floor becomes a veritable watercourse, clean and pure-looking as a mountain streamlet. Abundant moisture in the atmosphere, and but little variation of temperature, are the natural results, and produce just the effect the Ferns desire, to judge from their appearance. —*Gardeners' Chronicle*.

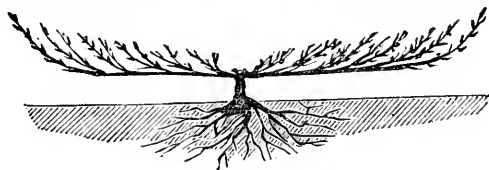
THE JAPAN VARNISH TREE.—*Le Moniteur Illustré des Inventions* recommends the introduction into France of the *Rhus vernix*, which yields the Japan varnish. It is cultivated in Japan and China, and could doubtless be raised to any extent in this country. The varnish is procured by making an incision in the trunk in the same way that is practiced in gathering pitch from the pine. The yield is said to be very large, and there is every prospect that that the cultivation of the tree would be profitable.

THE LEMON TREE IN NORTHERN ITALY.—The branches being full of turpentine, and of an elastic structure, can bend under their winter load of snow without breaking, and can thus either shake it off or give way beneath it without injury. This is another manifestation of the admirable manner in which trees are adapted by nature to the atmospheric phenomena of the region where they are destined to exist. Even could Olive trees grow and flourish in a northern climate, they would soon be despoiled of all their branches by the mere weight of the winter snows.

The Lemon trees certainly showed a more vigorous constitution than the inhabitants of the south of Europe give them credit for. Those that were only exposed to two or three degrees of frost were not injured in the least. A degree or two more killed the young shoots at the circumference of the tree, but it was only in the lower part of the coldest ravines or torrents leading up to the highest

mountains that the trees were destroyed. In some such regions, however, entire orchards were killed. Although individual proprietors were thus injured by the loss of their Lemon trees, the district as a whole was not materially damaged, the immense majority of the trees having escaped. Indeed, it struck me that the destruction, where it occurred, is to be explained by the proprietors having been tempted by the great profit attending the culture of Lemon trees to extend it to exposed unsheltered regions, which do not give them the protection they require in exceptional years, even on the Riviera. The fruit was destroyed in many places where the trees were uninjured, or only the small shoots nipped. I presume that two or three degrees of frost really had this effect. —*Gard. Chronicle*.

TRAINING PLUM TREES.—I send you a sketch of a tree of Denyer's Victoria Plum, which has been planted four years. As the mode of pruning and training which has been followed is, I think, well suited for low walls or fences, a brief description may prove interesting. After the tree had been planted, every branch was cut away but the two bottom leaders, which were left a foot long, and trained in a horizontal direction with the points a little raised. After the tree had broken, and the buds were about an inch long, thumb and finger pruning commenced. Two shoots were left on each leader, one as near the base as possible, the other at the point; the latter was allowed to run in an upward direction and stopped when about 24 inches long, while the shoot near the base was stopped when a foot long. In the second year's pruning



the leaders, which were 36 inches long, were pruned back to 30 inches, and trained horizontally, the points being a little raised; the subordinate shoots were pruned back to 9 inches, and trained in a line with the leader. At the time of disbudding, three shoots were left on the leader, and two on the subordinates; the end shoot on the leader was allowed to grow in an upward direction, and not stopped; and the shoots on the subordinates were stopped, the one nearest the base when a foot long, the other when 18 inches. The third year's management was similar to the preceding. —CHARLES SQUIRES, Heywood, Westbury, Wilts, in *Gard. Chronicle*.

PEAR DOYENNE DU COMICE; was obtained by the *Comice Horticole* of Maine and Loire-France. There is a figure and description in a recent number of Decaisne's 'Fruitier Museum.' It was observed first in 1849, and was named *Doyenne du Comice*. Decaisne remarks, that it is particularly remarkable for the beauty of its color, and the delicacy of its flesh.

DIFFICULTIES OF DEFINING SPECIES.—Dr. Hooker, who, with his father Sir W. J. Hooker, has perhaps the largest collection of dried plants in the world, says the difficulty of distinguishing one species from another in the large genera is very difficult indeed. Yet he was utterly unaware of the full extent of this difficulty before he undertook the preparation of the "Flora Indica," with Dr. Thompson. The task of determining what were really species was very perplexing.

The Carices, which most young botanists think so difficult, he says, present the most definite characters of any genus.

STOCKS FOR VINES.—Shortly after the introduction of Snow's Muscat Hamburg, a great many gardeners, and myself among the number, prophesied that it would soon slip out of cultivation, even that its excellent quality would not sustain it, owing to constitutional debility; and judging from the ordinary way in which Grapes are grown, there existed cogent reasons for the supposition. The result of my experience, after having grown it for three consecutive years, is, that I could never produce a sound bunch; more than three parts constantly shanked, while many of the berries not unfrequently remained green to the last: not grown on its own bottom, but grafted in a shoot of the Golden Hamburg. What staggered me, and set at defiance every attempt to solve the problem, no shanking ever occurred with the Golden Hamburg; many of the bunches exceeded 3 pounds in weight, and many of the berries were $3\frac{1}{2}$ inches in circumference. We would naturally suppose, under such circumstances, the Muscat Hamburg could find no excuse for shanking, unless under the plea of pertinacity; however, its unsatisfactory proceedings eventually led to its expulsion. Three years next June, I went to see Mr. Snow, of Wrest Park, who, I am informed, stands sponsor to this Grape; and here it failed to exhibit itself to much better advantage than elsewhere. It also may be noticed, that I have never seen it produced at our metropolitan or provincial shows, in a state to deserve attention, till entering the exhibition rooms

of the Edinburgh Horticultural Society last September, my eye caught the noble bunches produced by Mr. Fowler, gardener at Castle Kennedy. While telling Mr. Thomson of my unsuccessful efforts, he at once said—"Graft it on the Black Hamburg and your troubles will cease." So, without one word more, off we started to see his performance. Judge of my surprise to find ordinary sized canes, the produce of grafts put on in 1862, each carrying six bunches, many of them considerably over 5 lb. in weight, without a shanked or deformed berry. This utilitarian stroke, if I may use the expression, at once convinced me that Mr. Thomson's experiment was a decided success, and I at once resolved to put it into execution. While discussing this matter, the conversation turned over to the question, "What is the best stock on which to work delicate growing Vines?" when Mr. Thomson at once introduced the Black Hamburg as the best qualified for every purpose; nor does our present knowledge allow us to impugn the validity of his statement, more particularly when looking at what he has accomplished in the case of the Muscat Hamburg. But, said he, "the Barbarossa is the worst—no Grape is found to do well on it." This I know, to my extreme regret, to be experimentally true. When this useless variety was first introduced, I planted nearly the whole of our late Vinery with it, but ultimately, owing to its bad flavor, I found it necessary to cut it down, and had it grafted with the following kinds:—White Muscat of Alexandria, Golden Hamburg, and Lady Downes' Seedling, neither of which, with every care and attention, could be made to produce more than a half a crop, and that of so miserable a description as to induce me to keep every one out of the house unless upon business. The bunches were long and straggling, the berries set imperfectly. I have nothing to complain of in the way of shanking, but the stems yearly shrivelled, and the skin became as tough as Morocco leather. The border cannot be charged with any defect, as in the same house West's St. Peter's yearly produces excellent crops. In one of our early Vineries the Barbarossa has been used as a stock for the Buckland Sweetwater, and although the effect is not so decided as in the former case, the inferior condition of the fruit fully testifies that the deteriorating influence is at work. The above detail has caused me to wander somewhat out of my way. I can only claim the liberty of having done so in my anxiety to prevent others running into the same mistake, and to support with practical testimony the truth of Mr. Thomson's assertion.—A. CRAMB, in *Scottish Gardener*.

BIOTA PENDULA, says M. Ortgies, in *Garten Flora*, it is well proved, is but a seedling of *Biota orientalis*, a well known polymorphus plant.

DAHLIA IMPERIALIS, received by M. Ortgies of Zurich, from Mexico. He says, in the *Garten Flora*, that "in its elegant habit, rapid increase, ease of culture, beauty and number of its flowers, splendor of form, grandeur of color, it is surpassed by none of its older rival species."

ORCHARD-HOUSES AT SAWBRIDGEWORTH.—The Orchard-houses at Sawbridgeworth are now in their glory; and those who are desirous of forming an opinion as to the advantages to be derived from this system of fruit culture, should seize the present opportunity of seeing the first stage of the process, and judging as to whether it is a success or not. For our own part we believe that it is the only way by which Peaches, Nectarines, and Apricots can be grown in this country with any degree of security, or with any assurance of a crop, short of the usual systems of fruit forcing; and all that has been for so many years said of the difficulties attending it, must have been gained from cases in which therequired amount of skill has been deficient.

When we see venerable old Apricot trees, luxuriant, even under their weight of years, covered with masses of bloom; and when we consider that these same trees have occupied the same pots for a period of ten years, we cannot but admire the beauty and advantage of the system. In one of the largest of the Orchard-houses, which is 100 feet long by 24 wide, there is a perfect forest of Peaches, Nectarines, and Apricots in full bloom, while many of the last named have already set their fruit, and are perfectly safe and uninjured by the severe frost of 11°, to which those out of doors were subjected on Thursday last. How many of these have escaped? and what prospect of a crop of fruit is there from those that have been exposed to such a trial? We would advise all who are fruit-growers to take the present opportunity of visiting Mr. Rivers' nurseries, and of forming an opinion for themselves as to what may be done, and how easily, in this, one of the most captivating branches of horticulture.—*London Cottage Gardener*, March 29th, '64.

ABANDONMENT OF THE BOTANIC GARDENS OF TRIESTE AND VENICE BY THE AUSTRIAN GOVERNMENT.—We learn from an European correspondent, that these famous old Botanic Gardens have been abandoned by the Government. The former has been let out to a former Curator for the purpose of a commercial establishment. The Trieste Garden has fallen into the hands of a local

Horticultural Society, which intends to maintain it if possible.

It is remarkable, that as nations progress their love of horticulture increases; while as they decline, the love of gardening dies with it. There are no gardens in barbaric wastes.

SUPERSTITIONS CONCERNING THE MISTLETOE.—The mistletoe was with the Druids an object of much higher veneration than the oak. They were accustomed to strew leaves and branches of the latter around their altars, but in honor of the former they had special ceremonies. Every year they assembled to receive what they regarded as gifts from the gods. A priest arrayed in white, ascended the tree in the presence of the people, and with a consecrated golden knife cut the mistletoe, and threw it down into a sheet held for its reception. It was then distributed to the people, who preserved it with the utmost care, or give small pieces to the friends as valuable new year's presents. They had not always, however, golden knives with which to perform the operation of cutting, and were obliged to use an inferior metal, for in the "Medallie History of Carausius," by Stukeley, the writer, in speaking of the winter solstice, our Christmas, says: "This was the most respectable festival of our Druids, called yule-tide; when mistletoe, which they called 'all-heal,' was carried in their hands and laid on their altars, as an emblem of the salutiferous advent of the Messiah. The mistletoe they cut off the trees with their upright hatchets of brass, called 'celts,' put upon the ends of the staffs which they carried in their hands. Innumerable are these instruments found all over the British isles. The custome is still preserved in the north, and was lately at York. On the eve of Christmas Day they carried mistletoe to the high altar of the cathedral, and proclaim a public and universal liberty, pardon, and freedom to all sorts of inferior and even wicked people, at the gates of the city, towards the four quarters of heaven." This was less than a century and a half ago. All the northern nations of Europe entertained a great respect for the mistletoe at the time of the year when the sun approached the winter solstice, and the use of the plant was not unknown to the ancient Greeks and Romans, for we find allusions made to it in Virgil, who compares the golden bough in *Infernis* to the mistletoe. And some remnant of these ancient superstitions remain with us to this day, for we cannot gaze upon it without some slight feeling of reverence, although utterly disconnected with any religious ceremony, unless it be that of

matrimony. Mr. Archdeacon Nares says, "The custom longest preserved was the hanging up of a bush of mistletoe in the kitchen or servants' hall, with the charm attached to it that the maid who was not kissed under it at Christmas would not be married in that year." Of course we would not charge our maidens of the present day with believing in such a superstition as this, but there are probably few of them who would like the season to pass away without having one kiss under the mistletoe.

The mistletoe being so much associated at this period of the year with Holly, Laurel, Ivy, and other evergreens, we find mention of it in connexion with them by the poets. Gay says:

"When rosemary and bays, the poet's crown,
Are bawled in frequent cries through all the town,
Then judge the festival of Christmas near,
Christmas, the joyous period of the year!
Now with bright holly all the temples strow,
With laurel green and sacred mistletoe."

Langhorne in his poem of the mistletoe and the passion-flower, referring to his schoolboys days, says:—

"That truant time full well I know,
When here I brought in stolen hour,
The Druid's magic mistletoe,
The holy hermit's passion-flower."

SHAMROCK [*Trifolium repens*, L.] from an Irish word, *seamróg*, which seems to be compounded of *seamar* *ogh*, holy Trefoil, and is apparently the same as the Celtic name of Clover given by Marcellus of Bordeaux, physician to Theodosius the Great, *visumarus*, from *vi*, sheep, and *sumar*. It is usually taken to be the Dutch Clover, and this is regarded by the Irish themselves as the right Shamrock. Mr. Bieheno, however, in a paper, of which there is an abstract in the Philosophical Magazine for 1830, p. 288, has maintained that the Wood Sorrel is entitled to this honor, on the ground that the Shamrock is represented as having been eaten by the Irish, and a sour plant; that it is abundant in early spring before the White Clover is in blossom; and that it is called Shamrog by the older herbalists; while the Clover is not esculent, is not sour, and was not common until it was introduced for cultivation in the 17th century, and not in blossom on St. Patrick's day, the 17th of March. Unfortunately, in the short abstract given of his paper, there are no reference to the Herbs where the Wood Sorrel is called Shamrag, or to the works in which this is said to be sour. Nares quotes from Taylor:—

"Whilst all the Hibernian Kernes in multitudes
Did feast with Shamrags stew'd in usquebaugh."

And from Wythers:—

"And for my clothing in a mantle goe,
And feasts on Shamroots as the Irish doe."

But such sarcastic allusions as these prove nothing. It is further to be remembered that, as it was upon the leaf of the plant and not its flower that St. Patrick explained the Trinity, it is nothing to the purpose that the White or Dutch Clover is not in blossom on his day. Any Trefoil would have served his turn equally well. It is scarcely possible that Mr. Bieheno really found the name assigned in old Herbs to the Wood Sorrel, for neither in our English works, nor in Keogh's *Botanologia Hibernica*, is this the case. There is therefore no ground whatever for admitting this change, and the Shamrock may remain as before, the White Clover. *Prior's Popular Names of British Plants.*

Horticultural Notices.

CIRCULAR OF THE AMERICAN POMOLOGICAL SOCIETY.

IN conformity with a resolution adopted at the last meeting of this National Association, the undersigned give notice that its Tenth Session will commence in Corinthian Hall, in the city of Rochester, N. Y., on Tuesday, September 13th, 1864, at 12 o'clock, noon, and will continue several days.—All Horticultural, Pomological, Agricultural and other kindred institutions in the United States and the British Provinces, are invited to send delegations, as large as they may deem expedient; and all other persons interested in the cultivation of fruits are invited to be present and to take seats in the Convention. The great Annual Fair of the N. York State Agricultural Society will be held at Rochester on the following week, so that delegates who desire to do so can attend both meetings, and those who contribute collections of fruits to the Pomological Society can afterwards exhibit them at the State Fair. Throughout a large portion of the country the prospects of the fruit crop are very encouraging, and as the Fruit Growers' Society of Western New York will place its entire collection at the disposal of the American Pomological Society, a display of extraordinary interest may reasonably be expected.

Among the prominent subjects which will come before the Society at this session will be that of the revision of the Society's Catalogue of Fruits. The Special Committee appointed for this purpose are now, with the various State and local committees,

actively engaged in collecting such information as will aid in determining what varieties are best adapted to the different sections of our country, and this information, in form of reports, will be submitted to the action of the Convention.

All the States and Territories are urgently invited to be present, by Delegation, at this meeting, that the amicable and social relations which have heretofore existed between the members of the Society may be fostered and perpetuated, and the result of its deliberations, so beneficial to the country at large, be generally and widely diffused.—Members and Delegates are requested to contribute specimens of the fruits of their respective districts, and to communicate in regard to them whatever may aid in promoting the objects of the Society and the science of American Pomology. Each contributor is requested to come prepared with a complete list of his collection, and to present the same with his fruits, that a report of all the varieties entered may be submitted to the meeting as soon as practicable.

All persons desirous of becoming members can remit the admission fee to THOMAS P. JAMES, Esq., Treasurer, Philadelphia; or to the President at Boston, who will furnish them with Transactions of the Society. Life membership, Ten Dollars; Biennial, Two Dollars. Packages of Fruits may be addressed as follows: "American Pomological Society, care of JAMES VICK, Rochester, N. Y."

MARSHALL P. WILDER, *President*,
JAMES VICK, *Secretary*.

BROOKLYN HORTICULTURAL SOCIETY.

This energetic society is progressing considerably towards a superior influence in Horticultural affairs, and we look for it to take its place as a permanent institution alongside of its sister societies of Pennsylvania and Massachusetts. In some particulars it is setting both a better example. In the matter of premiums, in particular, it is very liberal; at the recent exhibition \$10 was offered for Cut-Flowers, \$30 for Cut-Roses, \$8 for Cut Hardy Plants, \$15 for best 4 bunches Grapes, \$10 for Strawberries and so on. This is the right way for societies to encourage competition. The offer of a few dollars for a lot of stuff that will scarcely, perhaps, pay portage across the street, will not bring competition from any one but those who live but a stone-throw from the exhibition hall, and who usually, in consequence, sweep the whole board of premiums offered, through no competitors having a chance to offer against them.

The liberality of the Brooklyn Society induced us to expect a fine exhibition, and we consequently enlisted a friend going on, to take notes for us. He does not think the articles exhibited anything near equal to what he has seen of the same kind at the Philadelphia shows, but found everything much better than he expected. Of the grapes, particularly, he thought highly; some of the Muscats and Hamburgs, from Fox Meadow Gardens, weighing 3 and 4 pounds each,—and these too he understood from vines that had been regularly forced for the past 9 years.

The strawberries he thought very fine, both at the Brooklyn Horticultural Society and at the *Agriculturist* office where there was an exhibition going on. He thinks though, of all he seen, new or old, the *Triomphe de Gand* was still the best. The general impression in New York, however, was that the season was so very poor for strawberries, that the new kinds had little chance to show themselves to advantage,—where one plant of these were grown there were probably a thousand *Triomphe de Gands*, and by so much a greater field to select fine fruits of the latter from.

We give below an abstract of the award list:—

FLOWERS AND PLANTS.—The collection is too large to enumerate, most of them common plants. The Pelargoniums, Fuchsias, Seedling Verbenas, Petunias, Cut Roses, Carnations, hanging baskets of Flowers, Orchids, Cacti and Variegated Leaved Plants are worthy of a more extended notice.

The following premiums were awarded:—

PLANTS IN POTS.—Best collection, Adolphus Wacker, gardener to H. Bearnese, \$30; best four specimens, \$10; best six ornamental leaved plants, Mr. Skinner, gardener to Mr. Hoyt, Astoria, \$10; second best, A. Wacker, &c., \$5; best collection of Cacti, Wm. Grant, gardener to Mr. Vanderventer, Astoria, \$10; best single specimen Cactus, same, \$3; best six Fuchsias. Mr. Skinner, gardener to Mr. Hoyt, \$10; second best, Jos. Edwards, gardener to W. C. Pickersgill, L. I., \$5; best three Fuchsias, A. Wacker, &c., \$3; second best, Thomas Templeton, gardener to A. E. Masters, \$2; single specimen Erica, Mr. Skinner, gardener to Mr. Hoyt; best collection Orchids, A. Wacker, &c., \$20; second best, Isaac Buchanan, Astoria, \$10; best single specimen Orchids, A. Wacker, &c., \$5; best 12 Pelargoniums, Mr. Skinner, gardener to Mr. Hoyt, \$3; best six do., same, \$5; best single do., same, \$2; best collection of Petunias, Andrew Bridgeman, Astoria, \$3; do. Verbenas, Mr. Davison, \$5; best collection Seedlings, \$8.

CUT FLOWERS.—Best collection, J. Kavanagh, \$10; do. second best, A. Wacker, gardener to H. Bearnse, Astoria, \$6; best Roses, Andrew Bridgeman, Astoria, \$30; do. second best, Dailedouze & Zeller, \$12; best 12 hybrid perpetual Roses, A. M. Henning, gardener to J. Park, \$6; second best, James Weir, \$2; best 12 moss Roses, A. M. Henning, &c., \$4; second best, Dailedouze & Zeller, \$3; best collection of herbaceous Pæonies, Prince, of Flushing, \$6.

BASKET AND BOUQUETS.—Best arranged basket of Cut Flowers, P. Reid & Son, Brooklyn, \$10; second best, Beattie & Foulis, N. Y., \$6; third best, J. Kavanagh, \$3; best table Bouquet, Mrs. Chamberlain, \$4; second best, James Weir, jr., \$2; best pair hand Bouquets, Thomas Templeton, gardener to A. E. Masters, \$5; second best, James Mallon, \$3; third best, James Weir, jr., \$3; best hanging Basket, A. C. Chamberlain, \$6; second best, same, \$4.

STRAWBERRIES.—The *Tribune* prize berries—Brooklyn Scarlet, Monitor and Col. Ellsworth—were shown in great perfection. Triomphe de Gand and Russell also looked well. Thos. Cavanagh took the first prize of \$15 for the best 20 sorts. The second prize of \$10 went to A. S. Fuller for his collection. Mr. W. F. Heins showed 22 varieties, among them, several white sorts of promise. E. Williams, of New Jersey had 20 sorts, among the finest of which was the Triomphe.

GRAPES from the hot-house showed off well. Some really superb clusters of Black Hamburg, Muscat of Alexandria, Bowood Muscat, Zinfandel, St. Peter, &c., were shown by John Ellis, of Fox Meadow, N. Y., who bore off six prizes on these and other grapes, amounting to \$40.

WAX WORK.—The show of Fruits and Flowers was equal to anything we have seen; some of it was really elegant. The best and second best basket of Wax Flowers, by Mrs. Anna Smith, were awarded \$25, while the Judges give Miss De Wolfe \$15 for a splendid dish of Wax Fruit, and Mrs. Van Zandt \$10 for a basket of Fruit.

AQUARIUM. An award of \$20 was given Drake & Palmer for the best, and \$15 to C. H. Baxter for second best do.—*New York Tribune*.

EXHIBITION OF THE TORONTO HORTICULTURAL SOCIETY.

THE first Exhibition of the Toronto Horticultural Society, for the present year, took place in the Music Hall, on the Queen's birth-day, and was among the most successful shows of the kind ever

held in the city. The attendance was large, exceeding that of any previous exhibition, the hall, especially during the evening, being uncomfortably crowded. The display of Flowers, Plants and Vegetables was really fine and decidedly the best the society has yet made. There were eight large tables, covering fully one half of the floor of the hall, and every inch of them was occupied by either Flowers, Fruits, or Vegetables—of the latter there was a fine collection, considering the backwardness of the season. The Rhubarb, Celery, Lettuce. Onions and Cucumbers were very fine, while the Asparagus could not, we believe, be surpassed. The Floral collection, however, offered the chief attraction, and a great attraction it certainly was. The Geraniums, Roses, Fuchias, Gloxinias, Tulips, and Verbenas were highly creditable to their respective exhibitors. Mr. Fleming's collection of Geranium blooms, was much and deservedly admired. So were Mr. Gray's hybrid perpetual Roses. But the most attractive objects among the flowers were the first prize Verbenas, exhibited by Mr. G. Vair, gardener to D. L. McPherson, Esq. These were the observed of all observers on account of a simple but most effective mode of training, whereby the creeping habit of this flower is corrected and the spikelets of bloom made to stand erect.

There was a large table devoted exclusively to Foliage Plants and specimens of new and rare plants which were much admired, particularly by those versed in botany. Some very beautiful and tastefully arranged Bouquets—table and hand—were also exhibited. The collection of Fruits was small, as of course, must be the case at this season. A very fine Orange plant, bearing fruit, stood at the head of one of the tables and was an object of unusual attraction.

The Hon. G. Allan's gardener exhibited some table Apples which, though long since out of season, appeared as fresh and sound as when taken from the tree. It is said that Mr. Allan has a secret for preserving tender apples from decay and keeping them sound and fresh-looking for any length of time. If so, we hope he will let the entire brotherhood of Horticulturists have the benefit of it without delay. A rare fruit from the hot-house of Judge Harrison attracted much attention, from its shape and taste. It somewhat resembles a cucumber in appearance, and its flavor is not unlike that of the Pine-apple. It is named the *Philodendron tostum*. The Horticultural Society have reason to be proud of their first exhibition for this year, and we trust future ones will surpass that just held.—*Canada Farmer*.

THE GARDENER'S MONTHLY.

DEVOTED TO

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THOMAS MEEHAN, EDITOR.
W. G. P. BRINCKLOE, PUBLISHER.

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Hints for August.



FLOWER-GARDEN AND PLEASURE-GROUND.

Persons who have small places are often exercised as to the best way to lay them out. A too common error is to attempt too much. Having read of fine specimens of taste, or imbibed a love of the art from some superior work on Landscape Gardening, or some friend's extensive country-seat, it is quite natural to wish to make the most of a limited plot. And this making the most of the thing implies a good deal, while it leads into many errors. The *relation of the means to the end* should never be lost sight of, and nothing attempted that has not some well-defined object.

When a house is built, the first object is to connect it with the public road, with the stable, and with the offices. In laying out these roads, convenience and beauty must be consulted. The first suggests to go 'straight on;' the last whispers, 'curve gracefully round.' Convenience being the chief object, must be respected; and whatever deviations from the straight line is allowed to the importunities of beauty, should be done from a seeming compulsion. Hence the curve should have its salient point filled with a heap of roots or rocks, or a thick mass of shrubbery; or, what is still better, the soil should be raised to form a rise or knoll, as if the road had to be taken around to avoid the obstruction. Much may be done for a small plot by this plan of making the surface irregular. A dead level, or a regular plane, looks smaller than it really is. Around the house, it should be so, as a sudden transition from the delicacies of art in the building, to the roughness of nature in the grounds,

is offensive,—but a little distance off, very lively effects may be obtained by taking off a little soil here, and adding there, so as to make the surface broken and irregular. The effect may still further be increased by planting the rises, and leaving the lower surfaces bare. To still further give the idea of extent, shrubbery should be planted in irregular masses to conceal the fences and boundaries; and many objects on the place itself may be partially concealed by planting all with the view of exciting the curiosity to know 'how much more is beyond.' Besides the mere purposes of shade from the sun, and screen from winds, large growing trees should not be employed in decorating the property, as all large objects lessen the apparent size of the lot. Besides, small and medium growing trees afford a greater variety.

The walks being decided on with a view to convenience and beauty, and the general idea of giving the plot the appearance of as much extent as possible, being kept in view, it may be useful to say something as to the making of walks and lawns, and preparing the soil for trees and vegetables. A carriage-road on a small place should be at least eight feet wide. If so large, or the road so long that there is a chance of carriages meeting, it should be fourteen feet. There is not much use in under-draining most roads; it is better to make provision for the water to run freely over the surface. The road should be dug out six inches deep, and filled up entirely to the surface with rough stones, the harder the better. When full, the surface should be broken very fine with the hammer. The surface stones are usually broken to the size of hens' eggs, but if still smaller so much the better. Then sand should be put over the broken stone sufficient to fill in the spaces, and over the whole enough gravel or whatever material is employed, to just cover the sand; so that, when finished, the broken stone will not be more than a quarter of an inch, at most, beneath the surface. Should the road be steep, provision must be made to guard against washing by heavy rains, either by small gutters of stone or

brick, or by inserting cross bars occasionally to carry the water over the verges of the road. It may be further remarked, in road-making, that the extent of a lawn is apparently increased by having the walk or road sunk some inches below the general surface. On the other hand, a full walk seems to lessen the space. Small foot-paths need not be dug out over four inches, but in other respects they should be constructed as the others. Roads, in all cases, should have both sides nearly, or quite level—where one side is higher than the other, besides the unpleasantness to pedestrians, carriages wear such roads rapidly away, by the weight being so much greater on the lower wheels.

In preparing the grounds, it should be remembered that grass and trees are not only required to grow therein, but that they must *grow well*. The top soil of the lot is often covered by the soil from the excavations, trusting to heavy manuring to promote fertility. But this is a too slow and expensive process. The top surface soil should, in all cases, be saved, and replaced over the baser soil. Also, where it is necessary to lower a piece of ground, the top soil should be saved to place over again. The depth of the soil is an important matter, both for the trees and the lawn. It should be at least eighteen inches deep. In shallow soils grass will burn out under a few days of hot sun. In a soil eighteen inches deep a lawn will be green in the driest weather. For the sake of the trees, also, the ground should be not only deep, but rich. If from thirty to forty loads of stable-manure to the acre could be appropriated, it would be money well spent. Life is too short for it to be an object to wait too long for trees to grow, and planting large ones is an expensive, as well as unsatisfactory business. A tree in a rich and deep soil will grow as much in one year as in five in a poor one. So in preparing a lawn, it is fortunate that, while aiming at the best effects, we are helping our trees also. It is generally best to sow for a lawn than to sod, where much of it has to be done. The edges of the road must, of course, be sodded, the balance neatly raked over and sown. The best kind of grass to be employed in seeding is a disputed point, and it will no doubt depend in a great measure on the locality. Philadelphia and northward, the perennial rye grass is excellent. It commences to grow very early, and has a peculiar lively, shining green. South of Philadelphia it is very liable to get burned out in summer, and the Kentucky blue grass would be much better. It is much the best to have but one kind of grass for a lawn, provided it is suited to the locality. A mixture of kinds is apt to give

a spotted and variegated character, not at all pleasing. Some people like to see white clover growing thickly in a lawn, and others object to any thing but green. However, if a good grass-rake is employed freely in summer time, the heads of these flowers may be kept from expanding. Where there is a prospect of a month of growing weather, lawns may still be sown with grass seed,—the clover, where used, to be kept for sowing in April or March next. A small quantity of rye should be thinly sown with the grass, which, by the shade it affords, will prevent the grass from being thrown out by the frost. The rye must, of course, be closely cut in the spring, to allow the grass to get ahead of it.

The latter end of August is one of the best seasons of the year to transplant evergreens. The young growth of the past season has got pretty well hardened, so as to permit of but very little evaporation,—and the earth being warm, new roots push with great rapidity, and the tree becomes established in the ground before cold autumn winds begin. The chief difficulty is that the soil is usually very dry, which prevents much speed with the operation; and the weather being usually very warm, the trees have to be set again in the ground almost as fast as they are taken up; so that it is not safe to bring them from a distance. It is as well, therefore, to make all ready in anticipation of a rain, when no time may be lost in having the work pushed through. Should a spell of dry weather ensue,—which in September and October is very likely,—one good watering should be given, sufficient to soak well through the soil and well about the roots. A basin should be made to keep the water from running away from the spot, and to assist its soaking in. After being well watered, the loose soil should be drawn in lightly over the watered soil, which will then aid in preventing the water from drying out soon again.

As soon in the fall as bulbs can be obtained, they should be planted,—though this will not generally be the case till October,—but it is as well to bear in mind that the earlier they are planted, the finer they will flower.

Towards the end of the month, and in September, evergreen hedges should receive their last pruning till the next summer. Last spring, and in the summer, when a strong growth required it, the hedge has been severely pruned towards the apex of the cone-like form in which it has been trained, and the base has been suffered to grow any way it pleases. Now that, in turn, has come under the shears, so far as to get it into regular shape and

form. It will not be forgotten that, to be very successful with evergreen hedges, they ought to have a growth at the base of at least four feet in diameter.

FRUIT GARDEN.

August and September are favorite months to plant out Strawberries, with those who desire a crop of fruit the next season. In making a strawberry-bed, a warm, dry spot of ground should be chosen, with, if possible, a good loamy or clayey subsoil. A moist, wet situation is very unfavorable. It is best to subsoil at least two feet deep, and if the soil is poor, let it be moderately enriched with well decayed stable manure. In setting out, take care that the plants do not become dry from the time they are taken up till they are replanted, and see that they do not wither afterwards. Many persons cut off the leaves, if they are afraid of their wilting under hot suns, but a much better plan is to shade. Inverted 4-inch flower-pots are excellent for this purpose; they may be taken off at night. The dews will so invigorate them, that the shade will only be required for a few days. Sometimes in September they may need a good watering; but this should never be attempted unless a thorough saturation of the bed is given; and in a few days after, the hoe and the rake should be employed to loosen and level the surface, which the heavy watering will, in all probability, have caused to bake and become very crusty.

Strawberries are best grown in beds about four feet wide for the convenience in gathering the fruit, and giving them the best of cultivation. About three rows in a bed, and the plants twelve inches apart in the row, will be a good arrangement.

As soon as the fruit has been perfected on the Raspberry, the canes that have borne should be at once cut out. Some kinds throw up suckers very freely, and by this means rob one another and cause a very poor crop to be produced the next season. No time should be lost in thinning out the weaker ones, and only enough canes left that will be required to produce a crop the next season. The Raspberry ought to be so treated in the summer, that no pruning will be required in the spring but to shorten the ends of the canes. In rare kinds, where it is of more importance to get up a stock of young plants, than to get a crop of fruit, this advice will not, of course, apply.

Blackberries will, in the main require very much the same treatment as the Raspberry. They are also very liable to sucker up more than is desirable, and much attention will be required to keep them

within due bounds. Neither of these two kinds of fruit should be planted near a lawn, as the roots, if they once get into the grass, are very difficult of eradication and as troublesome as the vilest weeds.

Many kinds of fruit trees that have arrived at a bearing age, may perhaps be growing very vigorously and producing very little or no fruit. Those who have read our remarks in past numbers, will understand that whatever checks the wood producing principle, tends to throw the plant into a bearing state. For this purpose, summer pruning is often employed, which, by checking the most vigorous shoots, weakens the whole plant, and throws it into a fruitful condition. The same result is obtained by root pruning, with this difference, that by the last operation the whole of the branches are proportionately checked, while by pinching only the strong-growing shoots, the weak ones gain at the expense of the stronger ones. Presuming that the branches have been brought into a satisfactory condition in this respect, root pruning may now this month be resorted to. We cannot say exactly how far from the trunk the roots may be operated on, so much depends on the age and vigor of the tree. In a luxuriant, healthy tree, one-fourth may be safely dispensed with. In a four year old standard Pear tree, for instance, the roots will perhaps have reached four feet from the trunk on every side. A circle six feet in diameter may then be cut around the stem, extending two feet beneath the surface. It is not necessary to dig out the soil to accomplish the result; a post spade, or strong spade of any kind, may be driven down vigorously, describing the circle, and doing the work very effectually. Of all trees, the Peach is as much benefited by root pruning as any.

Many of the diseases of the Peach tree appear to arise from the effect of hard winters on the over-vigorous and half-ripened shoots. Root pruning has always the tendency, not only to throw a tree into bearing early, but also to ripen the wood early in the season, and before the frost can act much to injury.

The Grape vine at this season will require attention, to see that the leaves are all retained healthy till thoroughly ripened. It is not a sign of healthiness for a vine to grow late; on the contrary, such late growth generally gets killed in the winter,—but the leaves should all stay on, to insure the greatest health of the vine, until the frost comes, when they should all be so mature as to fall together. Frequent heavy syringings are amongst the best ways to keep off insects from out-door grapes, and so protect the foliage from their ravages.

HOT AND GREENHOUSE.

Preparations must now be made with a view to stocking the houses for the next winter and spring's use. Geraniums of all kinds may now be readily struck. A frame in a shady place, set on some light sandy soil in the open air, affords one of the best places possible for striking all kinds of half-ripened wood. A partial shade is at all times best for cuttings at the start, though the sooner they can be made to accustom themselves safely to the full light, the better do they usually do.

Seed of many things may also be sown for winter and spring blooming, particularly Cineraria, Calceolaria, Pansy, Daisy, Chinese Primrose, and some of the annuals. Great care is necessary with the Calceolaria. The seed is so small, that it rebels at the smallest covering of soil. The best way is to sow it on the surface, water well, and then cover with a pane of glass until fairly germinated; this will prevent evaporation and consequent drying of the seed. Almost all kinds of seeds germinate most readily in partial shade; but as soon as possible after germination, they should be inured to as much light as they will bear.

Many kinds of greenhouse plants, as Oranges, Lemons, Camellias, etc., may be inarched or budded at this season. The process of inarching is simple, and consists merely in bringing the shoots of two different plants together. The bark is very lightly shaved for half an inch or more on each shoot, which are then both tied together, and in about two months the union may be examined, and if found sufficiently strong, the scion may be separated and suffered to go for better or for worse with the stock you have selected for its helpmate through life.

VEGETABLE GARDEN.

Towards the end of the month, a sowing of Spinach may be made in rich soil, which will come in use before winter. That desired for winter and early spring use, is usually sown in September in this region. A few Turnips may be also sown for an early crop, but will be hot and stringy unless the soil is very rich.

As fast as Endive is desired for salad, it should be blanched. Matting thrown over is the best for this purpose, as the plants are not so liable to rot as when pots or boards are employed. In cold or mountainous regions, Melons are hastened in the ripening process and improved in flavor, by a piece of tile being placed under the fruit.

Celery will require earthing up as it grows, to get it to blanch well. It is not well, however, to

commence too early, as earthing up tends, in a slight degree, to weaken the growth of the plants. Take care, also, not to let the soil get into the heart in earthing, or the crown is apt to rot.

At this season of the year, more than perhaps at any other, it is important to hoe and rake between rows of growing crops. A loose surface soil not only admits the various gases that the roots luxuriate in, but it also prevents evaporation and checks a too great absorption of heat, and then, besides all this, the weeds are kept down, and neatness and order reigns. After every heavy shower, if the time can at all be spared, the hoe and the rake should be freely employed.

Communications.**BIRDS vs. SQUIRRELS FOR PUBLIC SQUARES.**

Report of Committee on Entomology of Pennsylvania Horticultural Society, submitted June 21, '64.

Whereas, It is a subject of earnest inquiry among Horticulturists, Pomologists, and others, how best to destroy the various insects that so seriously interfere with their operations, and are especially destructive to the shade trees of our city; and it being universally admitted that birds are among the most effectual agents to that end. And,

Whereas, It is the opinion of many that the squirrels in our public squares have driven away the many birds that formerly flourished there, and built their nests in the trees; Therefore,

Resolved, That the subject be referred to the Committee on Entomology, with directions to inquire and report on the following points, with the view of laying the matter before the City Councils for their action if thought advisable:

First. Were the birds more numerous in the public squares previous to the introduction of the squirrels in them than they are now?

Second. Do the squirrels interfere with or destroy their nests?

Third. Can any plan be adopted to encourage birds to build their nests in the trees in our public squares, and throughout the city generally, by placing boxes for their accommodation or otherwise?

Fourth. Can any measure be suggested for the consideration of the proper authorities, to more effectually protect birds and their nests from injury?

The foregoing preamble and resolutions, submit-

ted by Mr. Hagner at a former meeting of the Pennsylvania Horticultural Society, and referred to their Committee on Entomology, to inquire and report thereon, although involving some questions coming more properly within the sphere of a mammalogist or an ornithologist, have nevertheless been duly considered, and in relation to which, your committee beg leave to offer the following suggestions :—

In regard to the *first* proposition, as to whether the birds were more numerous in the public squares of Philadelphia previous to the introduction of the squirrels into them than they are now, your committee, for obvious reasons, cannot all be equally positive; but, they are of the opinion that they were; and, if any doubt had existed in the minds of those members of the committee who reside in localities remote from those under discussion, it would have been dissipated by the admission of the writer of the foregoing preamble, where allusion is made to "*the many birds that formerly flourished there.*"

During parts of the years 1833 and 1834, the chairman of your committee was a resident of the City of Philadelphia, and although he made no special note of it, yet, according to the best of his recollection of the matter, there were then no squirrels in the public squares, nor were there any complaints about the ravages of destructive insects. Of these latter, doubtless, many existed, but their limited depredations were not sufficient to excite the alarm, or even the special notice of the people; moreover, during the months of May and June, the public squares seemed freely visited by birds, and vocal with their songs.

Your committee, therefore, in this connection venture to suggest, that had the same fostering care been extended towards the birds that has been uniformly extended towards the squirrels, there would not have been at this day the same causes of complaint against the destruction of the fruit and foliage, as well as the trunks, of the city trees, by noxious insects. Other members of the committee, who have been more constantly residents near the localities under consideration, will be able to give a more conclusive testimony as to whether the birds were more numerous, and destructive insects fewer in number, before the introduction of the squirrels in the public squares, than they are at the present time.

In regard to the *second* proposition, as to whether the squirrels interfere with or destroy the nests of the birds, your committee answer, that it is not improbable that they do,—at least that they may

very seriously interfere with them, if they do not actually destroy them,—and this conclusion is deduced from the nature and habits of both the animals in question. Squirrels are essentially arboreal in their habits, and most of insectivorous birds are equally so; and this being the case, there would very likely be a trespass on each others domain,—the stronger and more courageous driving off and possessing the premises of the more timid and or the weak.

Although the various species of squirrels constitute a family belonging to the order *Rodentia*, or 'gnawers,' and their food consists entirely of nuts, grain, and sometimes the buds and young leaves of trees; yet it is recorded of a British species, that it is carnivorous as well as frugivorous, and that "it attacks young birds, and greedily devours them, nor is even the Wood-pigeon safe from its assaults."

Although, without any positive evidence of the carnivorous habits of squirrels, yet it is not impossible that their gastronomic nature may undergo some modification or change, by long contact with the aliments of civilization or domestication, as in the public squares. It is said of the Lion, even in his native wilds, when he has once tasted human blood, he forever after prefers that kind of food; and that squirrels should learn to prefer other than their usual food, is no more remarkable than what is every day witnessed in partially or wholly domesticated animals of other natural orders.

But even if it were conclusively manifest that squirrels *do not* attack the nests of birds for the purpose of destroying either the eggs, the young, or the nests themselves, the committee suggest that, according to their experience, the most casual interruption or interference alone is calculated to intimidate birds, and expel them from a chosen locality, especially if the interruption is practiced and continued during their nuptial or nesting season. The relation between mankind and birds, if it is desired to retain their company and good offices near human habitations, must be one of unimpaired confidence,—a single invasion of the domain of the bird may create a state of inquietude and suspicion, if it does not cause it immediately to change its locality. Birds have a singular faculty of discovering in whom they may safely confide, and whom they ought to avoid. The inclosures of those persons who keep cats and dogs and other climbing and prowling animals about them, will not be visited so freely and so extensively by birds, as those will who have none of these animals; provided that the people themselves do not trespass

upon the premises of the birds and thus disturb them.

The chairman of your committee has seen this characteristic in birds, and also in other animals, most happily and satisfactorily exemplified in the inclosure of a gentleman in Lancaster city, for a number of years. All the members of his family seemed to have a tender regard for the birds, and appeared to appreciate the mutual relations of confidence which was necessary to exist in order to retain the company of these animals near them, and hence birds of various kinds, as well as our common wild rabbit, were in the habit of building their nests every season upon the grounds, and in the trees and shrubbery of his premises; and in undisturbed repose rearing their young there, whilst other enclosures, where there were vicious or mischievous children, were entirely destitute of these animals.

We need no stronger evidence of the beneficial effects of the confidential relations between mankind and the animal world, in order to increase their numbers and efficiency, and retain them near human habitations, than that which exists at the present time in the public squares of Philadelphia, in relation to the squirrels. These animals are protected there by authority, and hence you do not find the squirrels as docile, as prolific, and as omnivorous in their native wilds, as you do in the very heart of a noisy and populous city.

The season too of lactation on the part of squirrels occurs about the incubating and rearing season of birds,—in May and June,—when there is always a state of anxiety and jealousy of intrusion on the part of the adults, rendering their harmonious occupancy of the same premises almost an impossibility, especially if those premises are limited in size; and the facilities of escape being greatly in favor of the birds, they are the first that would be likely to seek another habitation in a new locality.

The third proposition, "Can any plan be adopted to encourage birds to build their nests in our public squares and throughout the city, by placing boxes for their accommodation or otherwise," is one that involves many difficulties in the realization of any theory on the subject, however plausible it may be.

According to the observations of your committee, corroborated by the report of Dr. Leidy to the City Councils, in the summer of 1863, there are at least three different species of insects that are conspicuously destructive to the foliage and general health of the trees in the public squares, not including those that in their larva state bore into the trunks and branches, and these three have been more or

less confounded as the same insect, in its different stages of development.

The 'Span-worm,' (*Eudalimia subsignaria*), appears to be the most numerous, the most repulsive and the most destructive in its habits.

The 'Sack-bearer,' (*Thyridopteryx ephemeraeformis*), seems to be next in numbers and destructive qualities; indeed, so far as the experience of the chairman of your committee goes, this insect may be the most destructive of the two insects named, as it certainly is the most inaccessible to insectivorous birds.

The 'Bark-louse,' (*Coccus aceris*), although depleting the trees more or less of their sap, and thereby very sensibly effecting their general health and thriftiness, is not an enemy of so serious and repulsive a character as the two first named.

As a standing remedy to counteract the pernicious effects of these and other insects, the question under consideration involves the successful introduction of birds into the public squares, by offering them facilities for building their nests, rearing their young, and protection against the assaults of their enemies. In answering the main question, the committee presumes, that like causes will produce like effects at all times and in all places, and as they are cognizant of the fact that birds *have* been encouraged to build their nests and rear their young in boxes erected for that purpose, in the very heart of other populous villages and towns of Pennsylvania, that therefore the idea of colonizing them in the public squares of the City of Philadelphia may be reasonably entertained, although the progress at first might be slow, and attended with many difficulties. If birds were encouraged to make their habitations in the public squares, and were protected there, there is reason to believe that they would choose such a locality, as an escape from the annoyance of those heartless 'crack-shots' that are so often found in pursuit of them in the country. The chairman of your committee has known instances where birds have visited the same boxes, or boxes in the same locality, from his earliest recollection, through a period of more than thirty years, and have annually reared one or two broods of young ones in them, and that too in the main street of a populous town, and where they received no special municipal protection.

Until that confidence in man was cultivated on the part of the birds that now exists on the part of the squirrels in the public squares, the beneficial effects of the system of colonization could not be known, and as all the remedies for the destruction of the insects, that have been heretofore recom-

mended, seem to have been ineffectual, there appear to be well-founded reasons for trying some other plan.

In regard to the *fourth* proposition, "Can any measure be suggested for the consideration of the proper authorities, to more effectually protect birds and their nests from injury?" the committee may with propriety reiterate much that they have said in regard to the second question.

In addition to stringent municipal laws for their protection, every teacher in the public and private educational institutions, as well as every parent and head of a family in the city, ought to inculcate the duty of protection to the birds; and not only protection, but also such measures of encouragement as will induce birds to come into the public squares and elsewhere, and make their abiding place there. Protective laws are essential, but faithful officers to execute the laws, and an intelligent and orderly community to act in obedience to those laws, are concomitants quite as essential, if not more so, than the enactment of the laws themselves.

Before dismissing the subject, the committee beg leave to remark that too much confidence ought not to be placed in *any* remedy for the destruction of noxious insects, because such a course often throws people off their guard, and induces them to relax those manual efforts, which, if persevered in, would in many cases eventually produce the desired result. The employment of birds for this purpose, under the most favorable circumstances, ought ever to be regarded rather as auxiliaries or preventives, than as a positive cure for a redundancy of destructive insects. Moreover, their successful introduction and colonization in the public squares would require time and patient experiment; in the meanwhile the destructive insects are already there in countless numbers, and something must be done to check their progress by artificial means before a natural remedy can be brought to bear upon them.

It is known that birds of the swallow kind feed entirely upon insects, and it is also known that certain species of them readily take up their habitation in boxes that have been prepared for them. But, unhappily, these birds feed only in daylight, and on the wing, therefore they would be of little or no use in destroying the larva of the 'Span-worm,' and would only capture such of the moths as might sally forth in the early part of the evening, before the swallows had retired. Wrens, Robins, and Blue-birds would be most effectual as destroyers of the larva during the day, and Bats for the flying moths during the night. Many of these moths might also be destroyed by building bonfires in the public

squares during the latter part of the month of June, when they evolve from the pupa state. Some idea may be formed of the usefulness of a firetrap of some kind for the destruction of winged insects, by noticing the number of dead carcasses that may be found every morning, during very warm weather, beneath the gaslights, in store windows and elsewhere. The sight of these moths flitting about the street lamps in the City of Philadelphia during the month of June, ought to suggest to the inventive genius of some one, a plan for some kind of a 'fire-trap' for this purpose.

Tapping the trees with a muffled mallet, as recommended in the report of Dr. Leidy, if simultaneously applied over the whole city, and persevered in during the continuance of the span-worm in its larva state, the committee thinks must eventually prove the most effectual remedy for the destruction of this insect; in the meantime, any and every other remedy that human ingenuity may devise, ought also to be tried, and the result carefully recorded. An appropriation ought to be made by the city government to pay for this labor as liberally as other kinds of labor is rewarded; and every owner of private property, on which a single tree is growing, ought to co-operate in the work, by providing for the cleansing of the trees on his own premises at the proper season.

The 'Sack-bearer,' your committee have reason to believe, is, and has been, quite as numerous and destructive to the foliage of the trees in the City of Philadelphia, as the 'Span-worm'; and there is not a doubt that a great deal of the mischief perpetrated by the former has been attributed to the latter. From the peculiar habits of this insect it may bid defiance to the attacks of birds, or of the mallet, or of syringing, or any other similar process for its destruction. It never leaves its sack, and never moves without carrying that appendage with it, and as soon as it is disturbed it immediately draws itself within it, and closes it so firmly that no bird can dislodge it from it. This insect may be quietly working in the laceration and defoliation of trees in great numbers, without its presence being suspected, because it is in the habit of covering its sack with portions of leaves and stems, giving it the appearance of the dried dangling leaves that had been partially cut off by some other insect. And yet, of all the insects that may infest a tree, there are none so accessible as the 'Sack-bearer,' if the remedy is applied at the proper time and in the proper manner. As soon as the trees are divested of their leaves in late autumn, these sacks may be seen in great numbers attached to

the branches, and thus the whole winter is before the operator, during the favorable weather of which the work may be done.

A large number of the spindle-shaped follicles that may be seen on the branches of trees during the winter season, are the deserted habitaculi of the male 'Sack-bearer;' but a proportionate number are those of the females, and these contain the pupæ of the previous season, which are filled with eggs, numbering from three to four hundred in each. All the operator has to do, is to cut off these follicles while they can be seen, by means of a pair of pruning-shears affixed to the end of pole. They should then be carefully gathered, and burnt or scalded. The chairman of your committee has seen this entirely successful, on a limited scale, in a number of instances. These experiments have been sufficient however to illustrate the principle; and to make it entirely effectual it only requires the city authorities to make provision for this work every winter, in which private property holders should co-operate. For a history of the transformations and general habits of this insect the society is referred to the 4th volume of the *Penn'a Farm Journal*, page 272, where it has been described under the name of *Oiketicus Pennsylvanicus*. The same article was republished in the 2nd volume of the *Farmer and Gardener*, pages 105 and others.

The chairman of your committee has often witnessed with astonishment the injuries which many of the shade trees in Philadelphia and elsewhere have sustained from these insects, without any attempt having been made to abate the evil, notwithstanding the public attention which had been frequently called to the subject through the press.

As to the 'Bark-louse,' when trees become very extensively infested with it, there seems to be no other remedy but cutting them down and burning them; and yet, where trees are not suffering at the same time from other causes, they do not seem to sustain any very serious injury from these insects, unless they occur in unusual numbers and on small trees. A small stiff brush, affixed to the end of a pole, and frequently dipped into a solution of whale oil soap, or any similar substance, and then briskly passed along the under side of the branches, on which the cottony nests of these insects may be seen, before the trees are in foliage in the spring, will so far destroy them as to prevent the remaining ones from inflicting any very serious injury during the season which immediately follows.

Whatever the remedies may be that are employed for the destruction of noxious insects, they should be simultaneous and continuous. A gardener never

expects that a single weeding, at a single time, will destroy all the noxious or useless plants that shoot up without culture in his enclosure; but on the contrary, he must be constantly attending to this work from the beginning to the end of the season, and through every succeeding season; nor does he entertain the idea for a moment that he shall ever enjoy an immunity from noxious weeds, independent of his own efforts to exterminate them. It is the same in regard to noxious insects: they always have been, and, no doubt, always will be in existence somewhere. Restricted to their proper spheres, they may be of some use, if it be true that "nothing has been created in vain." It is their redundancy in certain localities and on certain species of vegetation that constitutes the great evil which is the subject of complaint. To counteract this evil, permanent municipal laws should be enacted for their destruction, as soon as it becomes apparent that their presence is injurious. No ephemeral or impulsive legislation will answer the purpose, but on the contrary, a special committee of the city government to attend to this duty, should be appointed, and a special appropriation made to meet all necessary expenses, just as any other committee is appointed, and any other appropriation is made. The rapid growth of Philadelphia, the increase of her parks and public grounds, and the high cultivation of the country around her—by which many noxious insects are driven in upon her—seems to demand legislation of this kind. When this redundancy of insects is once overcome, and the experiment of colonizing insectivorous birds has been successful, they will, without a doubt, maintain a healthful equilibrium; but should their numbers be insufficient for this purpose, and as long as such a state of things exists, other means for the extermination of the insects should be freely and vigorously resorted to.

Respectfully submitted,

S. S. RATHVON, *Chairman.*

LAYING DOWN A LAWN.

BY WALTER ELDER.

This is an important subject, and if properly treated, it may be the means of great improvement. I would lay down a lawn of a hundred acres with the same care as one of a quarter of an acre; as manures are generally scarce and expensive, I would do this way: where the surface and virgin subsoils are loamy, trench sixteen inches deep, open a trench two feet wide of a certain length, and put the soil along the end of the same length, to finish

when coming back with that piece; cut the soil down with a broad-edged mattock, break it fine and mix thoroughly; throw it over with shovels (a better and more expeditious mode than digging with spades), make up slight inequalities, and gather out roots of perennial weeds. If stones were few, and no larger than a man's two fists, put them in the bottom of the trenches; if large, haul them and the weeds away at once, so as not to tread down the soil after it is trenched; have air-slacked lime under cover, and spread it over the surface of the trenched soil, say forty bushels per acre; when at the end, open another trench the same length and fill it up, and trench the opposite way. Drain the lands where they needed it before trenching; if done in fall, winter, or early spring, sow it down thickly with oats, and when it shows ears, plow it under, (using the drag chain at the plow to fold the crop into the furrows, and after lying a fortnight to ferment, sow it over with super-phosphate of lime, and sow thickly with buckwheat; harrow and roll it down, and when it comes up, sow it over with guano. When the buckwheat shows bloom, plow it under, and let it lie three weeks to ferment. By this time it will be the first of October; harrow and roll, and stake out where all the trees are to be planted; dig all the holes, and plant the evergreens at once—planting the deciduous trees and shrubbery first of November. The following spring harrow along and across, sow the grass seed, and roll it firmly down; when it is an inch long, sow it over with super-phosphate of lime or guano. Mix the grass seeds with six times their bulk of finely broken friable loam, and it will sow more evenly; the seed should be sown thickly, as by that means the sod is always greener, the grass more nutritious and the blades finer. It is almost universally a fault to sow all seeds too thin. I would not sow clover with the grass, and would sow only one kind of grass. Some kinds of grasses thrive better upon one kind of soil than another, and this should be considered in making a selection. Seedsmen are generally good judges of the kinds adapted to different soils, as they have not only their own opinion but those also of their customers to guide them.

The deepening and enriching the soil and freeing it of weeds by summer plowing, are essential to success. The most effectual way of getting clear of weeds is by preventing their propagation. As all our pleasures and profits follow prudent outlay, so it is with a lawn. I have laid down lawns as above directed, and cut them eight times, when ten inches long, the same season. Some may hesitate at the idea of trenching a hundred acres, but is no

uncommon thing for it to be done, nor is it so expensive or slow a process as some may imagine: money cannot be more wisely invested.

Where trenching is not allowed, plow a foot deep, the after-management to be as above directed, gathering off all roots of perennial weeds every time the land is plowed and harrowed; and as all annual weeds are prevented from seeding by being turned under, with the manuring the garden crops, the preparation of the soil will be complete. Upon shallow sandy soils, plow according to the depth of the soil, as prudence will direct; instead of oats, sow strong-growing red clover, and dress it with plaster of paris mixed with marl, and plow it under when a foot high; sow the buckwheat crop, and dress the same with marl and lime mixed (ten of marl to one of plaster and lime); roll more firmly than heavy soils, as that will make them more compact and more retentive of moisture.

The next consideration is, how to keep the lawn in good order. Proper shelter is the first requisite. Without that other things will have less effect. A small lawn should be enclosed with live hedges and trees on the outer edges; large lawns should be wholly encircled with belts of trees, twenty or thirty feet wide and closely planted. The belts on the north and west sides should be double that width. It is the sudden gusts of drying and withering winds of summer, and the furious, blasting winds of winter, that destroy our grasses; but the trees break their force and renders them harmless. The beautiful green turf for which England is remarkable, is owing to the shelter the lawns get from the trees. Meteorologist say that our winds are dryer and more withering than those of any other country of the same latitude, hence we have more need of shelter. The grass should be mown frequently in hot moist weather, or the roots will be destroyed by mildew; and more readily so, if unfermented or strawy manures are used. The mildew grows in moisture and darkness, and luxuriates on decomposition: dry air and sunshine kill it.

The fertility of the soil can only be kept up by top-dressings of manure and fertilizers, all of which should be applied in fall, so that the snows and rains may wash their soluble ingredients into the soils, which gives life to vegetation in spring. There are several materials used; they should all be prepared some months before being used, so as to kill all weeds in them. Well-rotted barn-yard manures are best. Throw them loosely into heaps in spring, and turn them over twice or thrice during the summer, always turning the inside outward, to destroy all weeds and seeds by fermenta-

tion. Leaf mould, heaped up with its bulk of soil in the woods, and ten of that to one of lime well mixed and frequently turned. Plow up a headland of a farm lot, and put lump lime along the middle, then shovel up the soil and break it fine over the lime in the form of a steep ridge; do this in spring, and if the soil is moist the lime will be slacked in a fortnight; then turn it over, mix well; every time it gets covered with weeds turn it over: one of lime to twelve of mould, and four of tan bark that is well rotted, greatly increases the fertility of the heaps. Sawdust, too, well-rotted and mixed in such a heap is a valuable addition. Lime and plaster mixed with marl some months before using and frequently turned over, makes a valuable compost for sandy lands. Where any of the above are used, the lawn should be well scratched early in spring, so as to spread the top-dressing more thoroughly, which may have been lumpy when applied. Stones and other hard substances should be gathered off the lawn, so that the scythe or mower will not be injured; and when the land is dry enough, and all heavy frosts are over, roll the lawn firmly down. One of the best top-dressings I ever used on a lawn was *grains from a brewery*, it makes a luxuriant growth, and imparts a deep, rich green to the grass. I have also used well fermented *hops* from the brewery with good effect: they seem to kill all the worms in the soil. Wood-ashes are also very beneficial.

MR. ISAAC PULLEN'S ORCHARD-HOUSE, HIGHTSTOWN, N. J.

BY AN EAST PENN FRUIT-GROWER.

The most successful cultivator of the Peach under glass, of whom we have any knowledge, is Mr. Isaac Pullen, a veteran nurseryman of Hightstown, New Jersey. Mr. Pullen is, in fact, almost the only man who has succeeded in growing peaches in this way, for market, in a house devoted exclusively to this object, with a show of profit. We may add, that his fruit is of large size, high color, and of a flavor (under any circumstances) rarely surpassed.

For three successive seasons we have paid a visit each year to this place, and watched the management and progress of the experiment; and we now propose to give a few details of the method pursued.

The house is 100 feet long by 14 wide, a lean-to, with a southern exposure, protected somewhat on the north by barns and fences. The back of the house is formed of boards, fastened upon the inside and outside of upright posts, and the space is packed with some substance as in the walls of ice-houses. The roof is quite flat, and there is the

most ample means of ventilation in back wall and in the upper portion of the roof,—these ventilators being all opened and closed at one motion by very ingenious machinery. The trees are all in pots or boxes, the latter being at present rather preferred. The number of pots was 150.

The trees received a little liquid manure late in the fall, and were left standing upright, with the pots partly sunk in the borders. On the 30th of December, 1863, there being then no artificial heat in the house, the buds were much injured by frost; on some of the trees the buds were all killed. Those which were retained set as full a crop of fruit as was desired,—indeed, it required heavy thinning, and was not finally thinned sufficiently.

Mr. Pullen commenced heating the house on the 2d, of January, running the temperature from 75° to 80° and 90° by day, and 36° to 52° by night. On one occasion the temperature sunk, at night, as low as 32° without any apparent injury to the trees. This was on the 11th of February. The temperature out of doors was then 8°.

The trees were watered very gradually (once in three days) when starting, with water about 80° or 90°, and warm water was also used for syringing, which was done quite moderately at first. After the fruit was set, the trees were watered once in two days, and syringed every day; and finally, when warm weather came on, the watering and syringing was performed freely twice a day.

Air was given as early and as freely as possible, in the day time,—but it was not till the 7th of May that the ventilators were left open at night. The artificial heat at night was continued till the 24th of April, consuming in the furnace *eleven tons* of coal, but heating with the same hot-water pipes a small grapery.

The heat during the day, even early in the season, was often intense in the full sunlight; and in the month of May, the leaves being evidently burnt, the glass was painted with a thin coat of lime wash, which had a good effect.

The *black* or *brown aphid*, or plant louse, which attacks the leaves of the peach and cherry, was very abundant and troublesome. For the removal of this pest, smoking with tobacco leaves and stems was tried, with a fair degree of success. No less than five bushels of leaves raised on the place, and stems purchased for the purpose, were burned in these operations. Mr. Pullen says he has seen this insect so abundant out of doors, as to destroy the buds, and leaves, and literally kill an entire acre of nursery stock. The *red spider* was not so troublesome as the aphid, but still appeared to some extent.

The pots were plunged in the border, and were lifted once in two weeks, to check the growth of outside roots; but Mr. Pullen now thinks this operation should be performed once in seven or eight days.

As soon as the fruit begins to color, or shows symptoms of coloring, Mr. Pullen removes the pots or boxes to the open air, plunging and mulching the pots as before. He thinks early maturity, high color, and good flavor cannot so successfully be obtained under glass.

The first peach ripened, and fell from the tree, May 8th. The variety was the new peach *Hale's Early*, the earliest known peach, beyond all question, in the house or the orchard; a fruit of excellent quality and good size. The next peach to ripen was *Troth's Early Red*, which fell from the tree June 3d. The succession was as follows: Large Early York, Grosse Mignonne, Coolidge's Favorite, Crawford's Early, Early Newington, Vansant's Superb, Beauty of China, Snow Peach, Old Mixon's Free, Old Mixon's Cling, Harker's Seedling, Crawford's Late, Late Admirable, Late Heath Cling, the last being kept till Christmas last year.

The finest peach in point of size, color, and flavor, this season, was Coolidge's Favorite; the best last season was the Variegated Free. Mr. Pullen thinks the same peach will not prove equally good and beautiful every year. His favorite peaches are Large Early York, Grosse Mignonne, Coolidge's Favorite, Crawford's Early, Old Mixon Free, and Harker's Seedling; the last, he says, is rather late for market, but very 'nice.'

Mr. Pullen, by the aid of the sun's rays, and a little contrivance, marked the names of 'Lincoln,' and 'Johnson,' 'General Grant,' 'General Hancock,' etc., on several fine specimens of fruit, and sent them to the Sanitary Fair at Philadelphia, exciting no little curiosity and astonishment in the minds of those who did not know how the thing was done.

The names 'Lincoln' and 'Johnson,' were fixed upon two separate peaches, which grew on one stem, and this little gem of art was sent to the fair the very day President Lincoln visited the exhibition, and was presented to him by the ladies in the Horticultural hall. The surprise was that it could have been done so soon after the nomination at Baltimore; but Mr. Pullen informed us that it required only about a week or ten days to set the letters very legibly. It is done, as many of your readers probably know, by fastening a piece of oiled silk around a peach not yet colored, the desired letters being cut out of the silk; the parts of the fruit

left uncovered (including the letters) then color a brilliant scarlet, while the covered parts remain a pale green, or white,—thus making the letters look as if painted in carmine on a light ground-work.

The peach sent to the Sanitary Fair, bearing the name of 'General Grant,' sold for \$26.

Mr. Pullen sold the larger portion of his peaches to the confectioners of Philadelphia and New York at from \$3 to \$4 per dozen. A good crop for any tree of ordinary size, in the orchard-house, is two dozen, of large size and fine quality, though three and four dozen may be grown, and even more of inferior quality. Mr. Pullen thinks the crop of his house, if sold at the prices which he could obtain, would easily produce \$600, leaving still some fruit for himself and friends. It is pretty evident that it is not a losing operation, though not highly profitable, when all the expense and labor is counted up. Still, as we said last year, it is also evident that the orchard-house may be made successful, and that it would be an elegant luxury, and not very expensive, on a gentleman's place,—quite as desirable, in fact, as a grape house, and more profitable than a conservatory.

There is one thing, however, that must be noted. Mr. Pullen's orchard-house is heated with hot water, and the peaches are really 'forced.' Many of the English writers persist in calling this a 'peach house,' or a 'forcing house,' and not an 'orchard house,' as Mr. Rivers, who originated *Orchard-houses*, first told us that no heat was required, even in England. But Mr. Rivers now claims that, whether heated or not, a house for growing a variety of fruits, on trees, is an Orchard-house. So be it. We think the argument good enough. Still, an orchard-house, without artificial heat, we fear, will be of little value in the region of Philadelphia, for it has been found, by experience, that fruit cannot be brought to maturity in a cold house much earlier (even if as soon) as it can be obtained out-of-doors, in Delaware and Maryland. The size, and quality, under ordinary management, is also inferior. Hence, when good fruit can be had from the South before it can be produced in the orchard-house, it does not argue much for the value of 'glass-roofed sheds,' as Mr. Rivers called his new peach houses. The truth is, that the day after we left Mr. Pullen's place, we visited two large and costly Orchard-houses, near Philadelphia, which had been worked without artificial heat. This was about the first of July. Mr. Pullen had then gathered and sold nearly all his fruit. But in the houses above alluded to, not a single peach had swelled to half size, nor had a single specimen showed signs of

coloring. We thought, from appearances, that good fruit would be in market from Delaware long before the owners of those houses would have the pleasure of tasting Orchard-house peaches.

Mr. Pullen grew a few Nectarines and Plums this season, quite as successfully as he did the peaches, but did not find the apricots to bear the confined air of a heated house early in the season. The apricot, we believe, is not managed as successfully as other stone fruit in English Orchard-houses. There is but little demand for Nectarines, Mr. Pullen says, among the confectioners, but they call for apricots, as eagerly as for peaches.

Mr. Pullen, we think, may be set down as the successful pioneer of orchard-house culture in America, and we feel that the horticultural community are largely indebted to him for his patient, skillful, and instructive labors.

FLOWERING OF THE NIGHT-BLOOMING CEREUS

BY J. P. NORRIS, WESTCHESTER, PA.

Any one who has once seen this beautiful flower in bloom will long remember it. There is something so strikingly odd in the time of its blooming, and in the beauty and lovely perfume of its flowers, that it makes a lasting impression on the mind of the beholder.

We have owned a plant of this species for some years past, but have never, until the present season, enjoyed its blooming.

We propose to describe, for the edification of those readers of the *Monthly* who have never had the good fortune to see this plant in bloom, the manner, and other particulars of its blooming.

Without further preface, the reader must imagine that we are standing together in the greenhouse, while the gardener points out to us the world-renowned Night-blooming Cereus. High on yonder shelf, near the glass, we perceive a peculiar snake-looking plant, wound round and round a trellis, so that we might suppose that we were viewing some new species of snake of a bright green color. We can scarce forbear a smile when we are told that this is the celebrated 'Night-blooming Cereus.' "What!" we exclaim, "can *this* plant produce a flower that has set thousands in raptures of delight?" But truth is stranger than fiction.

If we look closely, we shall perceive a small furzy lump growing out of a branch of this strange plant. Several others are also noticed in various parts of the plant. We are told that these are the buds that will produce the wonderful flowers. After

inspecting the various other attractions of the greenhouse we leave, thinking that the 'Night-blooming Cereus,' about which we have heard so much, is a humbug, and does not equal many of the other attractions we have been inspecting. The 'Night-blooming Cereus' passes out of our heads to make room for some other thoughts.

Two or three weeks hence, we think we will pay another visit to our friend's greenhouse, to see how his 'Night-blooming Humbug' is getting along. Behold! a great change has taken place. What was before a small lump of tow to our eyes, has now developed itself into a large bud, furzy on the stem, and of a yellowish shade near the top. It has grown very much since our last visit. We are told it will open in a few days and are cordially invited to come and see it. We accept. The appointed night arrives. The greenhouse has been transformed into a rural palace. Dozens of lights sparkle among the rare and costly plants and lanterns of divers colors lend enchantment to the scene. We look with expectant eyes to the place where last we saw our 'green snake.' Behold! growing out from the stem a large flower of dazzling beauty appears. The outer leaves radiate in circles of surprising regularity. These are of a beautiful shade of amber yellow. The centre is of a pure white, with delicate yellow stamens. The yellow forms a charming background on which to display the dazzling whiteness of the centre. The whole forms a gorgeous picture, the equal of which we have never had the good fortune to behold. To crown all its other charms, a delicate vanilla-like perfume issues from the flower. There is something indescribably sweet in this perfume, which leads us to forget all others. Truly the whole is the most wonderful, and most beautiful flower that we have ever seen.

The proprietor very kindly presents us with one of the flowers, which we place in some water at our bedside, and fall asleep, to dream of a palace composed of 'Night-blooming Cereuses.' When we awake in the morning, we turn to where we placed the flower the night before, but in its place is a shrivelled and faded mass of leaves! All its beauty and fragrance are gone in a single night! Ah, how aptly might this be taken as a type of all human pleasures.

WILD FLOWERS.

BY THOMAS GARDNER.

(Continued from page 201.)

The Violet family is the next in our arrangement that has any thing of much interest, and these are

well known. Most of the European kinds are sweet-scented. Ours have not this advantage, but are more showy. There are eighteen species among our 'wild flowers,' nearly all of interest. The pansy of our gardens belongs to this family. Indeed, it is of this genus, a true viola—*V. tricolor*. The St. John's Worts contain a few pretty things, most are, however, insignificant weeds. *Hypericum pyramidatum*, or pyramidal St. John's Wort, has large, yellow flowers, and grows on dry hills, generally, in the Middle States. There are some of these shrubby, as *H. prolificum*, *H. aureum*, and *H. Kalmianum*, which, for their beauty, are often kept in gardens.

The Pink family includes such plants as Carnations, Pinks, and Sweet Williams, which most of us know and love so well. Most of our wild kinds are, however, very insignificant weeds. Some few are beautiful. *Silene virginica*, for instance, has bright scarlet flowers. It grows in the Middle States, extending southward. A white species, (*S. stellata*), with fringed white flowers and leaves in fours up the stem, is common everywhere in July, and is a very elegant plant. With two or three other rare species, very seldom seen even by botanists, the whole list of beauties in the Pink Worts is exhausted.

There are a few pretty things in the Purslane family. The *Claytonia* is the best. This has fleshy leaves—generally only two—long and narrow, and has a few white pink veined flowers, seemingly springing from these leaves. In April and May these Claytonias are abundant everywhere. They go by the name of 'Spring Beauty.'

The Mallow family has a few showy branches. The Althea or 'Rose of Sharon' is well known. In the swamps, near large rivers, the surface is beautiful in August with the yellow flowers of the *Hibiscus palustris*, or American 'Jute.' The Okra of our gardens belong to this family, and is the *Hibiscus esculentus*. The Cotton is also of the Mallow tribe, known to botanists as *Gossypium herbaceum*.

There are a few pretty plants in the Geranium family; only one, however, *G. maculatum*, would attract much attention. This is common in woods in early summer. The Wood Sorrels have but one pretty plant. This is the *Oxalis violacea*, and, though an humble plant, is very pretty indeed.

But the prettiest tribe of plants, to an American observer, is the Butterfly-flowering, *papilionaceus* or *leguminous*. Like the Cabbage-flowered tribe it is very natural, and its members are easily distinguished from other classes. The Yellow Acacia

is known as 'Golden Prairie' in Arkansas, (*A. lucida*.) The Yellow Cassia, a nearly allied plant, growing near all northern river banks, is known also as Wild Senna. The Yellow Baptisia is known everywhere as Wild Indigo. There are also many pretty peas, vetches, saintfoin, and clover, growing everywhere. The *Tephrosia virginica* is particularly handsome, and there is scarcely an insignificant plant in the whole family.

The Rose family is well known, but as they are mostly trees and shrubs, they are without the limits we have marked out for this paper. There is one very pretty herbaceous plant, not to be forgotten, however. This, is the Indian Physic, (*Gillenia trifoliata*.) It is found in rocky woods from New England to South Carolina; grows about eighteen inches high, and bears a profusion of pinkish-white flowers.

The *Melastoma* tribe is the showiest of any family of plants, but they are mostly tropical, and to be seen only in our greenhouses. The *Rhexias*, or, as our people call them, 'Meadow Beauties,' comprise the only native genus; we have eight species, and all as pretty as their foreign congeners. They grow mostly in wet meadows.

In the family of Evening Primroses the *Enothera* is well known. They are nearly all yellow or white.

In the Saxifrage family, the *Mitella diphylla* is a delicate and very pretty plant. The flowers are small, pure white, and fringed around the edges. It grows abundantly in the woods of the Northern and Middle States. Of the Saxifrages proper, one is very common early in spring, growing everywhere, over dry rocks, and making the whole surface white with bloom. This is the *S. virginensis*, or Early Saxifrage.

The Umbelliferous family is a very numerous one. To this the carrot, parsnip, parsley, and celery belong. Yet, in going through our herbarium, we cannot note one that we can say is 'a pretty wild flower.'

We were near passing over the Madder-wort family, with its 'cleavers,' and 'bedstraws,' and 'madders,'—useful enough in the arts and sciences, but of little application to our subject. But we must not forget the little Partridge Berry (*Mitchella repens*). Its red berries peeping through the snow, with its shining green leaves in winter, and very sweet white flowers in spring, make it well known. Again, the 'Bluets,' 'Innocence,' 'Dwarf Pink,' with, perhaps, some other common name, is one of the prettiest ornaments of our spring meadows. This is the *Houstonia cœrulea* of botanists.

(To be continued.)

The Gardener's Monthly.

PHILADELPHIA, AUGUST, 1864. -

✉ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box " Philadelphia."

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PRACTICAL PROGRESS,

In spite of the many drawbacks to Horticultural progress in these unhappy times, it is interesting to note that many improvements continue to be made.

The introduction and general employment of the digging-fork, and the hoe-fork, in digging land and keeping it clean, have been worth considerable to gardeners.

In the matter of tree planting,—once confined to a month in the fall and six weeks in the spring,—it is now spread so evenly over the seasons, that much more is planted, and that much more carefully and thoroughly done than ever before; and thus the extra expense that always accompanies hurry and limited time, is avoided, not to say the avoiding of the many losses from dead trees, that follows from the same cause.

Around most of our large towns the planting of evergreens commences about 1st of July, and continues until October, after which it is continued with more or less risk till middle of November. About April 1st to May 15th, the operation is again in season, leaving only six weeks in spring, and four months in winter, when nothing of consequence is done. This summer planting is, however, confined to plants under six feet high, and to places that are not far distant from the place of removal. The great danger is from the roots drying while exposed to a hot and drying air. Trees of sizes that take a long while in digging, are therefore exposed to this risk; while younger trees are lifted at once to the wagon, and the roots carefully preserved by shading while in transit, when, at the place of re-planting, a large tub of water is kept near the spot, and a dozen or so of plants at a time removed from the wagon to the tub, and then from the tub to the ground, which is pounded in about the roots as firmly as it is possible to do. The success of this plan is astonishing to those who have not tried it.

The roots seem to push so immediately that evaporation is at once provided for, and the trees will suffer little more from drought than the same trees not transplanted. The Hemlock, Holly, Arborvitæ, Norway Spruce, Balm of Gilead, Silver Fir, Scotch Pine, and White Pine, are found in practice to do well. The Austrian Pine, so far as tried, is not so successful,—nor has any attempt to box and ship trees to a distance done well. Still the much that can be done is a great gain over older practices.

This improvement in regard to tree planting we have before called attention to in our journal; but there is one little fact in reference to the laying of sod in summer, that we do not think has ever been referred to. Whenever it was necessary to lay sod in summer, it was expected to get very brown, and nothing but a continual use of the water-pot looked for, if an immediate green turf was desired. Now the plan is to lay the sod, with no especial pains to make it fit so very nicely at all the corners, or to lay so exactly level as a nice workman would deem indispensable; but over the whole, when laid, to spread finely sifted soil, from one-eighth to one-fourth of an inch thick over the whole. This is raked smooth and level, and then rolled firmly down.

Every one knows that if a very grassy piece of ground is hoed over, the destruction of the grass depends on getting the tufts to dry out by the sun. If the least soil gets over a piece, it will push out and grow again. The same principle is involved in the above-mentioned practice: a little soil thrown over the sod prevents it from drying for a few days until the roots push, after which it is safe against the hottest weather, and ready to become as green as desired after the first summer shower. This plan is much followed now by intelligent gardeners, who strive to understand their business and keep up with the times; and around Philadelphia, is in almost general use during the summer season.

It seems to us that this plan would have its advantages in spring and autumn work, where very large jobs of sodding have to be done. There is much cutting and fitting of sod, and much heavy beating to be done to make sodding in the usual way look nice,—all of which is avoided by this plan. The only objection is that it does not look immediately as nice as the pure sodding does. In the one case a fine green lawn appears at once; while, by the covering process, six weeks or two months will be required for the grass to get evenly above the new soil.

MUSHROOMS.

We believe that Mushrooms are not raised artificially to any great extent in this country. Every one who has tried to raise them reports indifferently of his success. The few good gardeners who do succeed in raising them, do not have the success they had when in Europe. Occasionally they make a 'good hit,' and produce an enormous crop,—next year they utterly fail. No one seems to have fixed on a plan uniformly successful in our climate. Our Horticultural Societies generally have standing premiums for them,—and we read in their reports of premiums being awarded; but these, on examination, are so commonly found to be the accidental productions of old hotbeds, that nothing results from the encouragement offered.

We are inclined to think their culture may be much simplified; and that, with half the care described in Horticultural books, a general full crop may be made tolerably sure.

Our correspondent, C. V. Hagner, Esq., of Philadelphia, has a very successful bed in operation, of which we were pleasurably made aware by his handsome donations of them to the Philadelphia Sanitary Fair. On visiting Mr. H.'s place we found several beds made according to the most approved rules of art,—all comparatively worthless,—while one which he made at hap-hazard from the refuse materials left on hand, was bearing charmingly. From what we saw at Mr. Hagner's, we are sure that any one who has a cool cellar may have mushrooms all summer, without much difficulty.

First, we would save the droppings of oat-fed horses. Instead of having them cast out on the manure pile, every morning have them thrown in a heap under a dry shed as the stables are cleaned. When about half a cart-load or so has been secured, the bed may be made. Choose a place in the cellar that is tolerably cool on a hot day, and not liable to get dry; here enclose a space with boards, on the floor, say five or six feet wide, and as long as may be desirable, so as to enclose a bed about two feet deep. Then make a bed with *short* stable manure, that has commenced to decay, but has not decayed rapidly. Fill with this nearly to the top of the boards. On this put put about four or six inches deep of the saved droppings, and then beat the whole firmly down. On this place about six inches apart the Mushroom spawn, which may either have been saved from some old hotbed, or procured from the chief seedsmen in the form of mushroom bricks. On this, and over the whole bed, place about half an inch of good loamy soil, and beat the whole firm and smooth,—a few days

after, water enough to allow the water to penetrate three or four inches, and then cover with light litter, and let the whole be till the Mushrooms appear.

Almost every cellar keeps at about 60° to 70° during our summers, and this regular temperature, so difficult to attain and regularly maintain in Europe by Mushroom-growers, and which constitutes chiefly the art of growing them there, being given to us without any labor on our part, by nature, ought to make us the country by excellence for Mushroom growing.

We have referred in these remarks principally to cellars; but any farmer or gardener who has a cool and not too dry shed, might no doubt have his mushrooms as regularly as his daily bread.

GROWING BULBS.

In reference to the advice given in our monthly hints, not to take up bulbs until the foliage is quite ripe, a friend informs us that the contrary is the practice in the bulb growing countries of Europe. He says the practice with the best bulb growers,—and that is indeed considered one of the secrets of their trade,—is to take up the bulbs as soon as the flowers fade, and lay them on their sides in some vacant place, and cover them with a few inches of soil, where they are left to ripen. The bulbs, he says, are much larger when so treated than when suffered to ripen where they grow, and that all the offsets are thrown off, making a clean round bulb. The flower, moreover, that is produced next year, is said to be much finer than when the root ripened undisturbed.

Our friend, who is a tolerably successful bulb grower, has tried this plan in this climate, and the result confirms the accounts he has received of the European mode.

At the present time, when national considerations render it so desirable that we should be as independent of Europe as possible, we have thought it our duty to give these ideas a prominent place, as, so far, every attempt to raise Dutch bulbs here any thing near equal to the imported ones, has signally failed. There is much in it that is consistent with what we know of vegetable physiology, and it also coincides with horticultural practices in other approved cases. It is well known that if we check a tree in its growth somewhat, before that growth is quite finished for the season, the result is much to the favor of the flowering principle. In fact, there are many trees that grow so strong, that nothing but severe root pruning will make them flower at all. To let a bulb have the benefit of all the

growth possible, may make it so very vigorous that it will send out many strong offsets; but that is not what we want; and if some practice can be followed that will throw the strength of the plant into the flowering principle instead of the offset producing capacity of the plant, it is a clear gain.

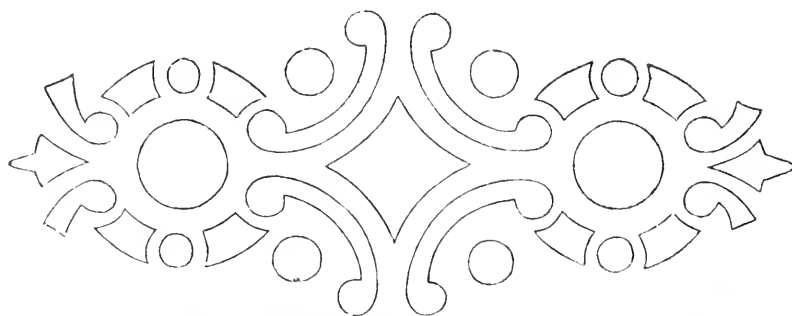
At any rate, it is well known that all home raised bulbs fail in just this particular. The offsets are numerous, and the flowers are small and few, until we have come to look upon it as a fixed fact, that a bulb once flowered is of no more value than an exploded cartridge.

We trust our bulb-growers will give the subject that attention it so well merits.

PLAN OF A FLOWER-GARDEN.

We give below a plan of a flower-garden, taken by a friend some twenty-five years ago or more, from one on the grounds of Colonel Vernon Harcourt, near Ryde, in the Isle of Wight, England. Flower-gardening is on a very extensive scale at that place, and he has placed in our hands a set of beautiful plans of gardens that exist in the same grounds.

This particular one is especially adapted to a long and narrow strip of land, and to be looked down on from an eminence.



FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA.

The annual Fall meeting of this society, we learn, will be held at Easton, on the 27th, 28th and 29th of September, in connection with the Pennsylvania State Agricultural Society's Fair, held there the four last days in the month.

The Fair will be held in the beautiful park at Easton, and the Fruit Grower's Society will be accommodated with a special tent for their discussions, and we believe the whole reception and arrangement of the fruits for the Fair will be given into their hands.

Ceres usually taxes Pomona to make her annual festivals popular; but this going of these beauties hand in hand together on the same errand is a novel sight, that will not fail to be unusually attractive.

The President of the Fruit-Growers' Society, Mr. Rufus A. Grider, is 'up to Schnitz,' as they say, we suppose, in his neighborhood. Anticipating the possibility of a greater crowd at Easton than the citizens would be disposed to accommodate at a "reduction from their usual *fair* rates," he has arranged for special night trains, to run at low prices, to the neighboring towns of Bethlehem and Allentown, where the members of the society will be received as brethren ought to be.

STRIPS AND QUERIES.

✂ Communications for this department must reach the Editor on or before the 10th of the month.

✂ The Editor cannot answer letters for this department privately.

PRESERVING HALF-HARDY PLANTS IN WINTER.

—K. writes:

"Can you give in the *Monthly* a list of plants in ordinary green or hot-house cultivation, that can be kept through the winter, *buried in the garden*? as cellar room *entirely free from frost* cannot always be had. I buried all my fuchsias last winter and never lost a twig on one of them. Cannot Lantanas, Lemon-Verbenas, Gloxinias, Achimenes, Bouvardias, and perhaps (if kept dry) Scarlet Geraniums, be kept over the winter in the same way? Any information on the subject would, in view of the high price of fuel, be very acceptable to your readers. I buried my Fuchsias in a pit in the same way that vegetables are preserved, putting a little litter over them and covering with about two feet of earth."

[This is a subject deserving of particular attention, in which few of us have had much experi-

ence; but on which all may have some idea, formed from observation on some particular circumstances. To many, the extraordinary price of coal will be a severe trial of their love for hot and greenhouse flowers the next winter, and we shall be very glad to have any notes from our correspondents, before offering any thing of our own on the question.].

TREES FOR SANDY GROUND.—Noticing, in many parts of New Jersey, where the soil was evidently very sandy, that trees with long tap roots apparently did better than those the roots of which remained along the surface, we applied to a very observing correspondent for his views. It will be seen he refers it rather to the character of the subsoil; though of course the capacity of the roots to make use of that subsoil is something. The subject should attract the attention of those who have sandy land:

"In replying to your request of June 1st, I find it necessary to make a few explanatory remarks. The Sweet Chestnuts you have seen growing about Egg Harbor City in a very healthy state, would not in the least be a rule that the same are well adapted to grow with success in a sandy soil; those were planted only a few years ago. Chestnuts do not grow wild in this section of New Jersey, and those you noticed had good soil put to them. This part of our settlement is very heavy ground, say from a sandy loam to a stiff clay. The numerous brick houses of this place were built of bricks made here. Where ever you see many ground oak growing, there, you may be sure, the subsoil is heavy with gravelly loam; only the top is sand, varying from two inches to five feet or more in thickness.

All trees grow well with us with the exception of the Cherry. I have planted about three dozen of them, and have only three left, and they are in a poor condition. I have endeavored in vain to find out the cause of it. I planted them in different soils and localities; wild cherries, however, grow to large trees.

In a sandy soil all trees, without exception, will make many fibrous roots. I have had many opportunities within the past years to ascertain this fact. I layered, for instance, a lot of Norton's Virginia and Herbemont Madeira vines, (both kinds are hard to raise from cuttings), partly in sandy soil and partly in a stiff potter's clay; those raised in the clay had but a few long roots, while those in the sand had a great abundance of fibrous roots. The same is the case with standard trees. I have frequently seen, near the Mullica or Egg Harbor river, in old cultivated farms and gardens, pear and

apple trees of great vigor, which were at least from 60 to 80 years old, and which, judging from their healthy appearance, may live many years yet, although they stand in quite light sand; so much so, that a person not acquainted with the nature of the soil, would almost believe that in such a spot nothing could grow."

PHILOLOGICAL CRITICISM.—A correspondent thus remarks:

"*Phlanges* seems to me to be a phunny way to spell *flanges*."

Phancy our pheelings at being phound in this phunny phix!

However, we may say in defence, that our notion is that it ought to *phlange*, if it is not. Philologists are not agreed as to whether it is of Saxon, French, or direct Greek origin. If the latter, our spelling is as correct as 'phantasy,' 'pharisee,' 'pharmacy,' or any of the rest. That it is of Greek origin we assume, because of its analogy in structure with other words of Greek origin, all with a certain degree of connected signification.

But we suppose we must not enjoy our own notions of propriety, but bow to the same authority that makes us spell theatre 'theater,' colour 'color,' honour 'honor,' etc., and confess that it should be written *flange*; and if ever Webster, or any other may, shall make 'filadelfia' 'phashionable,' we will bow to the decree likewise. It is'nt our province to object.

The same good friend sends also the following!

SENTIMENTAL CRITICISM.—"The writer is ever indifferent to what motives may be imputed to him in his business transactions," is, to me a strange expression for one who, I suppose, has a constant and careful regard to a high standard of integrity in all his transactions."

To which we say, our kind critic has not caught us so squarely as he did on the flange question. It may be passing strange, but still 'tis true. We do just what we think right, and the imputation of an unworthy motive to us rarely excites more than a smile. When we approve of root-grafted apples, if people say we do so only because we can find employment for men otherwise idle in winter, they are quite welcome to the imputation.

THE PENNSYLVANIA TEA AGAIN.—A Philadelphia paper prints a long communication from a Delaware correspondent, attacking the *Monthly*, for the assertion that good things will work their own way into public favor without their seeking so much

protection and encouragement from the public press; and he enters into a history of coal in Pennsylvania, showing how it was opposed, and yet is popular. We suppose he means that we oppose the 'tea,' (which we do not, but only its fraudulent name), but it will be popular for all. May be so; but it is only an inverse way of proving our own position. Good things succeed either in the absence of 'national protection,' or in spite of unreasonable opposition. Either view suits us.

NEW FERN FOUND AT THE SANITARY FAIR.—C. P., writes:—"I enclose a few fronds found among some moss and litter that came with the evergreens from the Alleghany mountains. All my botanical friends consider it new, and being found under such circumstances would it not be well to give it a name commemorative of the patriotic occasion of its peculiar discovery."

Several friends have referred this fern to us, and it made enough talk to be of public interest here. But it proves to be *Woodsia ilvensis*, a fern rare in most districts, but common in the Alleghanies.

CEMENT TANKS.—A correspondent writes that he saw some years ago, cement tanks in use in New Haven, and suggests that Mr. Hooker's claim will lose force. We shall be glad to have further particulars. We are aware that cement tanks have been often used. One of them is recently described at page 74 of this volume, by Mr. Cummings, of Reading, Mass. The novelty to us of Mr. Hooker's tanks consists in the manner of *laying the tank in the ground*. If this is not an original idea, we shall be glad to know, as there will be no use in paying Mr. Hooker for what is already common property.

RECEIVING THE MONTHLY.—M. B., Rochester, N. Y.—We have not received your magazine for May. We do not understand why it is not sent to us? Please send your magazine in future in season and without fail, as it is very inconvenient, and compels us to forego the pleasure obtained in its perusal.

[We give the above as a sample of unnecessary sharp notes the publisher sometimes receives. Every newspaper and magazine publisher's mailing system is of that nature, that it is almost impossible they should miss sending subscribers their papers. Therefore, when they fail to arrive, it is the fault of the Post-office; all we can do is to supply numbers when civilly notified that they are missing.]

NAMES OF PLANTS—L. S. M., Milton, O.—

What is the correct names of the plants I enclose; one has a long *white* tubular flower (1). The other has large blue bell-shaped or ranunculus-shaped flowers, opposite in the axils of the leaves (2). The first is a greenhouse plant; the other a wildling, and grows 18 inches high.

[1. *Gloxinia tubiflora*.

2. *Dipteracanthus pallidus*.]

DEPARTMENT OF AGRICULTURE POSTAGE.—Hon. Isaac Newton informs us, that by a law recently passed by Congress, the full franking privilege has been restored to this with other Departments, by which it will be seen that no prepayment of postage is required in addressing small parcels, seeds, cuttings, etc., to this department.

FRUIT IN RICHMOND, IND.—A correspondent says: "We have a small crop of apples, plenty of Gooseberries, a light crop of Raspberries, and some Strawberries. *Not even a bloom* of Pear, Peach, Plum, Apricot, Quince or Cherry (either Heart or Morello. Grapes mostly killed to the ground. Peaches, Quinces, Blackberries, etc., ditto. Currants no crop, as far as I have heard, except a few bushes that were protected from the cold."

WRITING FOR THE GARDENER'S MONTHLY.—Our correspondents are reminded that all manuscripts sent to publishers are entitled to be forwarded at the rate of two cents for four ounces, provided that one corner of the envelope is cut and left open and the word "manuscript" is written on the face of the envelope. Authors availing themselves of the provisions of this law, will remember, however, that a letter or note inclosed with the manuscript, will subject the whole package to letter postage.

CEMENT TANKS.—We have two articles on this subject, both of much interest, but as we shall no doubt have others before our next number goes to press, we hold them over.

Books, Catalogues, &c.

HOW TO LAY OUT A GARDEN, &c. By Edward Kemp, Landscape Gardener, Birkenhead Park. Third Edition. London: Bradbury & Evans. 1864.

The task of an author, we are told, is either to teach what is not known, or to recommend known truths by his manner of illustrating them. The latter would seem to have been the object that Mr.

Kemp had in view when he prepared the excellent work now before us, of which we hail with pleasure the appearance of a new edition (the third), greatly enlarged, and illustrated with numerous additional plans and sketches of gardens and garden objects.

When noticing this work on a former occasion, we expressed our belief that it was one of the best books on pure garden design in the English language. Our opinion remains unchanged. There may indeed be more learned and classic works on the subject of landscape gardening; but we doubt if there is one that contains so much useful information and practical details, relative to the laying out of a garden, as are to be found in this unpretending volume.

The first part of the book, which professes merely to be suggestive, is devoted to a consideration of the various characteristics most generally desirable in a place of residence, but which are sometimes overlooked, or not so much attended to as they ought to be. The most important are the selecting of a site for a house, and the means of access to it; the nature and appearance of the surrounding property; the character of the soil; the supply of water; the aspect most desirable for a house and garden, &c. These and several other points are fully discussed, and will be found well deserving the attention of every one about to purchase an improvable property, with the view of forming it into a permanent residence.

The second part tells "what to avoid," and shows that negative rules are sometimes of importance. For want of such beacons, it is truly observed, many a person who has gardened for himself has irretrievably spoiled his place before discovering his error. The most prevalent mistake is attempting too much, of which we have in our time seen some glaring examples, attended with the very same results as Mr. Kemp has described. Under this head it is remarked: "The effect of a garden may be marred by the formation of numerous flower-beds, or groups of mixed shrubs and flowers, on the lawn. This is a very common failing, and one which greatly disfigures a place, especially as where intended only for flowers such beds usually remain vacant and naked for several months in the year. Flower-beds, too, when introduced in any quantity on a lawn, have an exceedingly artificial appearance, and interfere sadly with all ideas of breadth, harmony, and repose.

In a small garden the employment of rockeries, or other rustic objects in connection with the house, or in its immediate neighborhood, is objectionable; and for this reason: "Every house must be re-

garded as a work of art, whatever may be its class or merit, and there would consequently be a want of harmony in associating it with any thing composed of or resembling the uncultivated parts of nature. However ingeniously it may be contrived or executed, therefore, a rockery near a house must be considered radically wrong; and though great skill should be used in adaptation, or a variety of fortunate circumstances eventually awaken interest, these can never wholly atone for a fundamental error."

In this way many errors that are frequently committed are pointed out, in order that they should be specially guarded against. Among these may be noticed the adoption of too great a mixture of styles in gardens. Unsuitable ornaments, such as figures, bridges, flag-poles, groups of stones, &c., all manner of eccentricities, and in fact every thing partaking of the nature of a sham, must be avoided by persons who have any desire to obtain credit for correct taste.

"What to attain," embraces a wide field for discussion, and forms the subject of the third part of the book. Here we have the general principles laid down upon which the art of landscape gardening mainly depends for being practised with success. We have also the rules that are applicable to them fully explained and illustrated, where it was considered necessary to do so, by a variety of neatly drawn plans and sketches, which will be found well deserving of careful study and attention. But it must not be supposed that the knowledge of these rules will enable any one to lay out a garden according to order, as it is obvious that every place will have some peculiarity belonging to it which will require a certain manner of treatment. Hence the landscape gardener must be guided by other circumstances, as well as rules. He must know the nature of the ground and the appearance of the surrounding scenery; the aspect and style of the residence; and the wants and wishes of the proprietor. These having been ascertained, he is then enabled to display his taste and skill by modifying some one or other of the rules, and adapting them in such a manner as to produce not only the best effect, but to harmonize with existing objects.

Nature is the great school of landscape gardening, but Mr. Kemp is not one of those who would carry the principle of imitation of nature very far, or into minor matters. On this point we subjoin the following excellent remarks:—"To regard a garden otherwise than a work of art, would tend to a radical perversion of Nature. It is and must remain that which its proximity to the house alone

enables it to be. No ingenuity can convert it into a forest glade or a glen. Nor is such a transformation to be wished for, were it possible, any more than that a dwelling should be transmuted into a hut, or a den, or a cave. A garden is for comfort, and convenience, luxury and use, as well as for making a beautiful picture. It is to express civilization and care, and design and refinement. It is for the growth of choice flowers, and the preservation and culture of exotic trees and shrubs, with novel and interesting and curious habits, which could not be reared without the most assiduous guardianship and attention. In these respects it is fundamentally different from all natural scenes.

"Reflections such as these will make it plain that they who would imitate Nature in gardens, must do so in another way than by copying her piecemeal. They ought, indeed, to be imitators, but not copyists, transcribing her spirit, and not her individual expression—her general countenance or aspect, and not her particular features. An artist, be he a painter or a landscape gardener, or an amateur in either branch, should go to Nature to study principles, gathering up snatches of scenery, and storing them in his memory or his portfolio for future adaptation and use. He should note all that pleases him, and endeavor to understand how and why it influences his mind. By thus filling his brain with numberless beautiful little pictures or images, and his intellect with the foundations and sources of pleasure in his art, he will come from Nature doubly primed to give practical utterances to his imaginings, and prepared to embody in a composition the finer touches and more artistic and spiritual elements which he has collected from such a variety of sources. It is in this way that the imitation of Nature will be but the ennobling of art; the airy elegance and flying graces of the one being engrafted on the more substantial characteristics of the other."

The preceding extract will enable our readers to form some idea of the pleasing and attractive style in which the book is written. After laying down the principles upon which the art of landscape gardening is based, Mr. Kemp proceeds to show how they are to be applied, and for this purpose he gives a variety of plans and details, from his own practice, in which he explains the peculiar features of certain places he had to alter and improve, and the manner in which their incongruities were treated. His remarks on architectural gardening, for which the taste appears to be gradually increasing, are full of good sense, and merit particular attention. Its proper sphere is stated to be the imme-

diate neighborhood of the house, and as an accompaniment to styles of architecture. Whether the latter is a variety of Grecian or Italian, the garden ought to be distinguished by symmetry and regularity. It should exhibit a strict observance of rule, and a prominent indication of art, so as to harmonize with the house and other architectural objects. It specially demands everything should be good and nicely finished, that the plants be of the best and most carefully selected kinds, the grass evenly laid, the figures and beds and edgings of walks neatly and accurately cut, and all the lines, whether of walks or edgings, extremely straight or regular.

We therefore cordially recommend it as being indispensable, not only to the young gardener, but to all who take an interest in gardening, and desire to acquire a knowledge of the principles upon which the beauty and attractiveness of a garden so much depend.—*London Gardeners' Chronicle*.

THE COUNTRY GENTLEMAN. Published by Luther Tucker & Son, Albany, New York.

We note with great pleasure the commencement of another volume of this excellent weekly agricultural magazine. It is conducted with a degree of talent that Americans are proud of. In this respect it is equal to any European journal, and superior to most of them.

It is in fact a marvel how such a superior magazine can be furnished so cheaply. The *London Gardeners' Chronicle and Agricultural Gazette* brings to its publishers \$5 per year. The *Country Gentleman* asks but \$2 50. Every American who takes pride in the superior agriculture of his country, is justly proud of the *Country Gentleman*.

New and Rare Fruits.

MOUNTAIN SEEDLING GOOSEBERRY.—"I send you some of these (Shaker) 'Mountain Seedling Gooseberries.' I have been waiting for them to ripen before sending, so that the seed would grow. Please try thy hand on seedlings from them, and let us know the result. It has been so dry with us this summer that they have not had a fair chance to fully develop themselves, as they would if it had been cold and moist. This variety is a very strong grower; it may be trained 5 or 6 feet high, easily if any one chooses to. I have had it in bearing 3 years, and never saw any sign of mildew about it. I am much prepossessed in its favor, and think it will take the place of those smaller kinds. My

bushes are full of fruit like the sample I send. J. Teas says the color is the same as 'Houghton's.' This is incorrect, for it is darker colored either green or ripe.

I also enclose a section of a shoot, to show its growth; and one or two berries of *Downing's Seedling*.—L. S. MORE, West Milton, O.

[The "Mountain" and "Downing's" were neither of them as large as we have seen. The former, of those sent, were nearly double the size of the latter, and of much better flavor to our taste.

It is surprising that this branch of Pomology does not improve faster. The English Gooseberry, it is now decided, is no better adapted to our climate than the foreign grape; while the Native Gooseberry is usually safe from mildew. With the disposition which the American Gooseberry shows to improve, it ought to render our desire for English varieties an obsolete idea.]

THE NEWER STRAWBERRIES AND RASPBERRIES.—In a private letter, a friend writes:

"The *Russell* and *French* have sustained themselves well, and will be extensively cultivated in our vicinity. Raspberries are doing well; last week was the height of the *Doolittle* and *Kirtland*,—we have about 500 quarts at a picking. This week is the height of the *Philadelphia*,—we sent away over 500 quarts yesterday.

We have plowed up nearly all of our choice tender varieties as unprofitable for field culture. Among those destroyed are the *Hornet*, *Fastloff*, *Hudson River*, *Antwerp*, *Belle De Fontenay*, *Allen*, *Cushing*, *Col. Wilder*, *Franconia*, *Orange*, *Vice-President*, *Ohio Everbearing*, *Catawissa*, *Cretan Red*, *Thunderer*, *Bagley's Perpetual*, *R. M. Conklin's French*, *Large-Fruited Monthly*, and some others of less note. The varieties we now have in cultivation, the number of which will be greatly reduced another year, are *Kirtland*, *Stoeber*, *Doolittle Black*, *Miami Black*, *Old Purple Cane* and *Philadelphia*, with some others on trial, such as the *Clark*, *Naomi*, *Lindsay's Fastloff Seedling*, *Downing's Seedling*, *Fillbasket* and others.

We have a large quantity of seedlings fruiting this year for the first time, all grown from hardy varieties, some of which promise well; none, however, will be retained that are not perfectly hardy in the open field, without protection of any kind from the winter's frost or summer's heat.

Having expended several thousand dollars within the last twenty-five years in experimenting on Raspberries, I have found but very few that are profitable for field culture; and if confined to two

kinds, they would be the *Doolittle Black* and the *Old Philadelphia* (which has been about twenty-six years working itself into public notice, and will become the principal variety grown in this vicinity, unless some other of superior merit is yet discovered.)

It is worthy of remark, that although large fields are now cultivated with small fruits, yet it sells higher in the market than when it was confined to gardens and small patches, showing that the demand increases faster than the supply, and there is no danger of over-stocking the market with good, wholesome fruit."

New or Rare Plants.

LUPINUS ALBO-COCCINEUS.—Of the many brilliant varieties of Lupine that have been introduced, this is by far the finest, and must undoubtedly be reckoned as an essential to every annual garden; the blossom spike is 6 inches in length; color, rich rosy red half way up the spike, from thence to the apex pure white; the general effect is very striking.

ABUTILON REGELII.—A magnificent variety of this ornamental genus, with deep, golden yellow large bell-shaped flowers, exquisitely veined, and produced in great profusion. Foliage very handsome.

ACACIA MYRIOBOTRIA.—A free-flowering variety with elegant rich green leaves and deep primrose flowers in racemes.

ACACIA ODORATISSIMA PENDULA.—A elegant variety, with long slender foliage and clusters of exceedingly fragrant yellow flowers, which are produced in great abundance, and in succession during the year; remarkable for its rapid growth and graceful habit.

Domestic Intelligence.

AN AGRICULTURAL MISSION TO CHINA.—We see it announced that Commissioner Newton has appointed VARNUM D. COLLINS—whoever he may be—agent of the Department of Agriculture, and sent him to China, charged with the selection of seed of new varieties of sorghum, and other products capable of acclimation, and the collection of other agricultural information.—*Rural N.-Yorker.*

HORTICULTURAL DEPARTMENT OF THE SANITARY FAIR.

(Concluded from page 214.)

Close by the market you can purchase plants, wax flowers, or, if you are in search of the substantials, they meet you in the shape of strawberries and cream, etc. Mrs. Dr. Darraeh is the presiding lady at the stand for wax fruit and flowers. Among the vast number of contributors to these tables, where the revenue is very likely to net a very handsome amount for the Commission, are: Mrs. Bowman, of Germantown; Mrs. Henry Morris, Mrs. Joseph Lovering, the Ladies' Aid Society of Lower Williston, Pa., (who send a fine collection of stuffed birds), Mr. B. I. Leedom furnishes fruit and vegetables; the House of Refuge contributes daily large quantities of cut flowers; Glenwood Cemetery sends the same. Three days in the week Miss E. Fisher, of Germantown, sends her contribution of cut flowers, and daily there is expected of strawberries and flowers from the Agricultural Department at Washington. Will's Hospital, Blockley Hospital, Laurel Hill and Mt. Vernon Cemeteries, send liberal contributions of flowers and fruit.

The nurserymen have been particularly active in endeavoring to add to the receipts. Many of these gentlemen, not being able conveniently to send flower plants, have deposited certificates, entitling the purchaser to select plants from their stock to the amount stated upon the card.

Among those sending these 'orders for nursery stock,' are William Bright, of Rising Sun; Robert Otto, West Chester; T. F. Seal, Chester County; E. Allen, New Brunswick, N. J.; F. F. Mercer, Catawissa; J. B. Gray, West Chester; E. J. Evans, York; H. M. Engle, and D. Engle, Marietta; Haines & Hacker, Cheltenham; H. A. Dreer, Philadelphia; Meehan & Wandell, Germantown; D. Nelson, Glenwood Nursery, and S. Miller of Lebanon. We must not omit to mention Mr. J. A. Wilson, resident engineer of the Pennsylvania Railroad at Altoona, who sent two car loads of evergreens to deck the columns and other portions of the hall. Mrs. Dr. Price, of West Chester, also sent many evergreens. Mr. John Menzies presented a moving ship, which is interesting and valuable.

Messrs. Cornelius & Baker furnished, among other articles, two very curious and attractive or for the border surrounding the fountain. These consist of a combination of gas jets and water-lilies. The stem and flowers are of iron, and the petals are formed of gas jets, and at night the effect is

very beautiful. The majority of visitors are completely deceived in regard to the mechanism of these ornaments.

The statuary, which adds so much to the display, comes from Mr. S. A. Harrison. Too much praise cannot be awarded to all the parties concerned in the horticultural display. Mr. William M. Ogilby superintended the plumbing and gas-fitting, and it is surprising that in the multiplicity of forms and devices, nothing was found defective on the opening day. Mr. Michael Mills had charge of the fountains and the water arrangements, and to his skill in the grouping of the plants in the centre is due much of the grand effect of the exhibition.

The display of aquaria is very large in this department, and deservedly attracts attention from the curious. In one of these beautiful ornaments there is a skillful and instructive combination of fire, water, air and earth. Near by is a magnificent *cactus* case from the fine collection of Mr. D. R. King.

But the most attractive feature of the exhibition in the Horticultural department remains to be described. Two rooms have been fitted up for representations of the Frigid and Torrid Zones. And first of the Arctic: A ship lies locked in the icy embrace of a frozen sea; ice-bergs tower above it; stunted Arctic vegetation, consisting of a few hardy and blast beaten pines, make the scene more chilling. Ice everywhere; near at hand, piled up in great mountains of crystal splendor; and, in the far distance, across the cold blue water, in bergs and fields of snowy whiteness, while in the back-ground, the artist's pencil has been used to give the spectator an idea of the vast expanse of vacant space. Over all is shed a pale blue light, containing not a degree of warmth, and the whole scene is one of frozen beauty. Professor Booth, who designed and executed this exquisite picture, has reaped new honors by his success, and the assistance rendered by Mr. Wunderlich has done much to render the scene a perfect one.

Next to this is the Torrid Zone, the production of the skill and taste of Mr. Wm. Southwood. Mr. King's fine collection of plants is here made to do duty, and the exhibition is a great success. Tropical vegetation, heavy, rich, gloomy and impenetrable, is grouped before the eye.

From the branches overhead hang rich and pendant mosses, whilst among them is seen a mischievous monkey and a brilliant-plumed parrot. Many birds of bright color are in the trees; a crane is seen extending his graceful neck from the foliage, and over all hang the dark green forest roof. No

sky is visible, and the little light which penetrates the foliage is dim and uncertain. Creeping for the jungle is a Leopard, ready to spring upon his prey.

Both these scenes are perfect in their detail, and are alone worth the price of admission to the Horticultural Department.

The ladies have taken a deep interest in the arrangement of the Horticultural exhibition, and the committee is indebted to their taste and industry for much of the success that has attended this branch of the Great Sanitary Fair. A permanent record of the names of the ladies and gentlemen concerned would be but simple justice. We can only particularize a few of the more prominent: Mrs. J. Rhea Barton, Miss Percival, Miss S. B. Dunlap, Mrs. Price, Mrs. Parrish, Mrs. Dr. James Darrah, Mrs. H. A. Dreer, Mrs. Robert Buist, and Mrs. Harmar have been very active in the good work. Among the gentlemen we find Mr. D. R. King, Chairman of the Committee; Mr. W. L. Schaffer, Mr. J. E. Mitchell, Chas. Harmar, S. S. Price, R. W. Marshall, J. C. Price, and Mr. Wagner, who have given their time to the perfection of the display. Messrs. Jas. Ritchie, T. Meehan, Robt. Kilvington, Jas. Eadie, and John Pollock, deserve more than a passing notice. These gentlemen were early enlisted in the movement, and have devoted their whole attention to the arrangement of the plants, flowers and fruits. All have the satisfaction of feeling that the department is second to none in the Fair in point of attraction, and as the daily attendance of visitors has been from 40,000 to 50,000 people, the pecuniary success must be assumed.

GOOD NEWS FOR LOVERS OF PEACHES.—The *Trenton Gazette* says that the peach crop promises to be large this year—the largest ever raised in New Jersey. "In Monmouth and Ocean counties we hear of no drawback to a large yield so far. The veteran producers of Monmouth county predict a crop above the average. Benjamin Reed, of Hightstown, has 180,000 trees in Ocean county that are in bearing, and is preparing to send to market 224,000 baskets. A friend, whose judgment we think is good, informs us that the fruit crop of New Jersey, south of the Raritan Bay, from present appearances will be very large."

LARGE PLUMS.—D. McKenzie presented us a few days since, with a few of the largest plums raised on his place in this village, it has been our privilege to look upon in a long time. One of them measured $6\frac{1}{4}$ inches around one way, and $6\frac{3}{4}$ inches

the other. If any person has larger or better, we would be most happy to handle a few of them.—*Sanilac Jeffersonian*.

MODE OF DRYING THE COMMON RED CURRANT.—The currants should be quite ripe when gathered, with the stems attached, and washed or rinsed effectually and drained off. Then stem them and wash them thoroughly, and to each pound of currants add a quarter of a pound of good Havana sugar; then place them in a preserving kettle over a fire until they come to a *scald heat*, when they are turned out into white earthen dishes, and exposed to the action of the sun, until, by evaporation, they become hardened on the upper side. Then they are turned over, and there remain until they become so on the other side, so alternate until they become a sort of leathery texture, when they are put away in earthen jars or boxes, until wanted for use. Care must be taken to keep them from the dews of night and rains during the process of drying; finally, the utmost cleanliness should be observed from first to last.

When used, enough hot water is required to dissolve them to any consistency suitable for tarts, jelly, &c. At the same time more sugar is required to make them quite palatable, which must of course be governed by taste. Currants in this way have kept well with us for three years, and the presumption is, that they will keep for a longer time, if well cared for.—*Horticulturist*.

WILD FRUITS OF CALIFORNIA.—This country is so barren of all kinds of timber, that but a few native fruits are found. The Elderberry grows along the banks of our streams, and in moist grounds; it is quite tart, and makes good pies and preserves, as well as vinegar.

We have one species of the Gooseberry, which bears semi-annually very profusely; jet black in color, resembling the largest-sized English Black Currants; little tart in flavor, and tastes much like the blue-berry. They make a very good substitute for the common Red Currant, in cookery.

On our small creeks, protected from Indian fires, the common, small, wild grapes abound, and bountifully. They make fine jellies, and are used for other purposes, the same as the small Eastern frost grapes. All of the above fruits make very good domestic vinegar.

There is another small red berry that grows upon the plains, on a bush resembling the common currant. The squaws gather large quantities of them for food.—S. W. JEWETT, in *Rural New-Yorker*.

LETTER FROM MR. P. B. MEAD.

The history of American Horticulture and the *Horticulturist* are so closely connected that everything relating to this magazine possesses an interest to our readers. We cheerfully make place, therefore, for the following note, from the late editor. Had it reached us earlier in the month, we should have placed it in a more appropriate column:—

MR. EDITOR:—May I presume upon your courtesy to address a few words to my old friends, the readers and correspondents of the *Horticulturist*. No inconsiderable portion of my life having been given to the Horticultural public "freely and without price," it would seem that something more is due to me than the very curt notice accorded by Mr. George E. Woodward, in the July number of the *Horticulturist*; at least something is due from me to my old correspondents. I am under many and deep obligations to them, which I shall always gratefully remember. My intercourse with them has been exceeding pleasant, and I should be pained to think that it would end with my retirement from the editorial chair of the *Horticulturist*. I cannot at this moment remember an instance in which I have not met with a hearty and generous response to any calls I may have made upon them. For these things, and for all our pleasant intercourse together, they have my sincere thanks. They have now a choice place in my heart, where their memory will ever be cherished.

To my old readers I would also return my thanks for the many tokens of approbation I have received from them. Pursuing my labors under peculiar difficulties, I have not been unconscious of my shortcomings, which have been received with more indulgence than I had a right to expect. My opinions may not have pleased all, but they have been faithfully and honestly given.

To my brothers of the press, too, I would return my thanks for the kindly notice and fair treatment that I have always received at their hands.

It would seem that there are already claimants for a share of my editorial labors. If by this is meant simply restraint, I have nothing to say.—These labors may have been great or small, but they are notwithstanding mine. Let me state distinctly, that all the "leaders," up to and including the July number, all the articles "BY THE EDITOR," all the remarks appended to articles, and all the "Table" matter, except some business notices and a book-notice, are every line and word exclusively my own. The name of the Editor has never been used to cover matter not my own. The articles under the firm's name are not mine. This state-

ment will prevent misapprehension for the future.

But it may be asked why I parted with the magazine. Chiefly because, situated as I was, I could not make it what it ought to be, and what I felt able to make it. Other reasons, quite as cogent, were not without their influence. I need not say that I parted with it regretfully, for I had learned to love it.

My correspondents can address me to my farm at North Englewood, N. J., or at my place of business in New York. I shall always be glad to hear from them.

Thanking you, Mr. Editor, for your courtesy, I do not say *vale*, but simply *au revoir*.

PETER B. MEAD;

Room 43 Moffat Building, 335 Broadway, N. Y.

TO COLOR WITH PURSLANE.—A correspondent of the *American Agriculturist*, "M. G.," gives the following directions for coloring with the common weed purslane, (*Portulacca oleracea*.) Boil one bushel of the green plant for three hours in a copper or brass vessel. Strain out the liquor and add to it 1 lb. of logwood chips previously soaked, or as much extract of logwood as equals a pound of the chips, and $\frac{3}{4}$ lb. of alum. Wet 3 lbs. of the goods to be dyed, place them in the mixture and expose to moderate heat for three hours; while simmering, occasionally raise the goods out of the dye and expose to the air. The resulting color will be a light bluish purple.

Mow lawns before the dew is off the grass unless you have a machine, which cuts it best when dry.

Foreign Intelligence.

SCIENTIFIC ASSOCIATIONS.—The relations which exist between the natural sciences are, perhaps, greater than at first sight may appear: it is only after having made oneself somewhat familiar with more of the separate branches of physics, &c., that one is able to form an idea how closely they are related to the more strictly called "natural sciences," a chain of relationship connecting the whole, so that it is difficult to have even a good popular notion of the one, without some knowledge, however slight, of the other. As an acquaintance with these subjects is considered necessary to every man of a liberal education, and as the taste of the public is inclining so much in that direction now-a-days, it may not be uninteresting to take a short

glance at the connection existing both individually and collectively, between geology, mineralogy, chemistry, crystallography, and biology, (both animal and vegetable (and in as short and succinct a style as possible to impress on the reader of any of these divisions of natural history, that he should not, through any inclination towards one particular department, deprive himself of the pleasure of its application to the others; and, since *application* is the whole *use* of a practical science, that he should neglect no opportunity of bringing his knowledge of one branch to increase that of the others.

Take that wide and interesting study, geology, for instance: its study, however useful, without its great expounder palaeontology, would be one of the tamest and most uninteresting, and its practical application nothing but the work of a digger or delver, save for the small light that would be thrown upon it by the minerals which you might meet, and which of themselves would be of little value but for the rigid chemical and crystallographic laws to which they are subject, and palaeontology itself would be useless and mere guess-work—you might have piles of fossil shells, and slabs of fossil reptiles and animals which would surpass those in the British Museum, and had you not zoology to identify your remains, and comparative anatomy to correlate their structures, you would be simply in the dark as regards the great problem of geology, the advancement of life on the globe.

The most trivial and apparently despicable circumstances relating to animal life should not be passed over heedlessly when you come to apply your mind to the great problems which will be laid before you; and the very best exercises to which the young student in geology can apply himself are the works of the most eminent laborer in this field of science—Professor Owen. He will see there that the work he has before him is not that which a young lady would adopt to pass away her time, but something like reality, which will require the whole of his energies, and good-will to boot. Inferior, certainly to the remains of animal life, but still affording an immense amount of information as to the former condition of the world, both as to climatology and structure, the beds of fossil plants and trees require to be studied with even more attention, inasmuch as there is less known about them, and that little requires to be well improved before anything like a definite classification of the flora and fauna can be arrived at. Of course this is the highest perfection of botany, and on which the most eminent naturalists have been, and are engaged. Thus a very fair botanical range is to be

attained, and will repay the trouble of gaining it, without fear of limitation as to the number and description of specimens.

Zoology and botany being generally studied together, each will contrast well with the other, and render the somewhat tedious labor, an agreeable recreation. The other ally of geology before mentioned, namely, mineralogy, is only another name for applied chemistry; and some of the nicest and most difficult operations in chemical analysis must be performed before we can tell the name of a mineral, which, perhaps, to all appearance, is the same as one of our every day friends; besides, the subject of mineralogy in its present rather crude state is one which by itself will be highly interesting, as in it every one can indulge his fancy on certain points which are not very definitely arranged, and in which speculations he may, by attention and study, both theoretical and practical, effect something which may really advance one of the most attractive subjects in nature.

The grouping of the various elements of minerals into their proper formulæ gives occupation to heads which in point of ability are second to none; while not one of those men whose names will be seen in every book on mineralogy could tell the composition of even the simplest granite which we kick along the road were it not for the assistance of a few agents and simple manipulative operations. Chemistry is so wide a subject, it would be out of our power here even to hint at even the heads of its many relations; but from what has been said above, it may be supposed that the study of chemistry is absolutely necessary to one who wishes to have an intimate acquaintance with the crust of the earth; and the advantages to be gained in every day life from an intimacy with chemical phenomena can only be appreciated by those who have received its benefits.

Physics, including in its wide range electrical and magnetical disturbances, changes and appearances, with the theory of heat and meteorology in their relations to chemistry, are most marked and intimate; a thorough knowledge of either demanding a fair knowledge of the other, some of the most fundamental principals in the former being totally inexplicable without the assistance of the latter, and *vice versa*.

From the very short sketch above given of a few of the relations of the natural sciences, it is evident that a subject so wide and so respectively intimate in relations should be pursued with a view to the ultimate end—an equal knowledge of them all.—*Irish Farmer's Gazette.*

THE RASPBERRY.—As Mr. Appleby has recently in this Journal so ably set forth all the points in the culture of the Raspberry, I will only make a few remarks in addition, or rather in confirmation of what he has said on the subject, with some practical lessons which the last few years have given on the matter, omitting as far as possible all repetition of what has been previously stated; the culture being so generally well known, that details respecting it are hardly necessary.

Taking, therefore, a cursory history of this fruit, we will see that for many years prior to 1844 very little attention was paid it in the way of improving the varieties then in use. A red one and a white one were almost all that many gardeners were acquainted with, and these thrust into some obscure shady corner generally succeeded pretty well; but about the above time, a vast improvement was made by the introduction of the Fastolf Raspberry, which for many years was very popular, and in places where it does well I have no doubt remains so yet. A large, well-tasted fruit on a plant of moderate growth, and remarkable for its bearing qualities, the Fastolf Raspberry remained, therefore, for many years at the top of its class, until others envious of its distinction came forward to dispute its position, and at the present time we have a number of aspirants to general fame. In my own case, I felt so satisfied with the Fastolf for several years, that I did not think another was necessary, until the dry seasons of 1857, 1858, and 1859, told seriously against this fruit on the dry ground the stools were planted in; but the failure or partial failure of the crop was set down to the absence of rain, and other causes of a like nature. The following seasons, though differing widely from those above referred to, did not effect that improvement in the character of the Fastolf Raspberry that was looked for, and the conclusion came to was, that the variety is "worn-out," its constitutional debility unfitting it for any longer fulfilling the duties required of it. Every allowance has been made, new plantations formed on ground that has not been so occupied for many years, but all to no purpose, the plant bears profusely, and the fruit is as good as need be wished for; but the plant scarcely makes any wood, and that often only from 2 feet to 3 feet long. Another evil, which to some may appear as a benefit, is that many of the shoots of the current season bear in August and September, and some very useful fruit is thereby obtained, but it impairs the shoot's bearing in the following season. Thus we often have great difficulty in obtaining canes for the next year, and then often

very short and weak, with, perhaps, now and then, one of a loose, rampant growth, overtopping everything else; but there are exceedingly few of these, and the plantation has anything but a promising appearance in the autumn.

Now, I believe this is not the case everywhere. On damper or more congenial soil the Raspberry flourishes and bears as well as before; but as the garden here is a dry one, and just the reverse of the one on which this fruit is found in a wild state, its constitutional vigor may be fully expected to give way sooner than when placed in a situation of an opposite character, and I can only account for the lack of success in 1860, 1861, and 1862, from this cause, as there has been no want of moisture for other things. I would, therefore, like to have the experience of other cultivators on this matter. I know there are many who believe in constitutional decay in fruit trees, and certainly there is no less reason to expect it in a Raspberry than in an Apple, Peach, or Pear; but I can hardly reconcile myself to any other cause, for the variety which ten years ago was healthy, vigorous and all that could be wished for, now drags out a wretched existence, bearing itself to death as some compensation for its unkindly appearance; but stools dying that are only three, or, perhaps, four years old, and the shoots for the ensuing year hardly raising above one's knee, give tokens of something amiss, which I am at loss to attribute to anything else than a wearing-out of the variety in question, not, perhaps, on all soils, but on the one we are obliged to have it grown on.—J. ROBSON, in *London Cottage Gardener*.

HORSE-SHOE GERANIUMS.—Put in cuttings in August; place in front of a wall exposed to the sun; give no water for a fortnight, after which water with caution; keep just free from frost during winter; in spring, pot nice bushy plants in six-inch pots: place out of doors in summer; pinch back long shoots, and pick off blossoms; towards autumn withhold water, so as to ripen the wood; when housed give them the warmest end; water with liquid manure, and allow them to flower.

HISTORY OF THE COFFEE TREE.—There may be now seen in one of the hothouses of the Museum of Natural History in Paris a Coffee Tree in full bearing. At the beginning of the last century, under the reign of Louis XIV., a plant of this kind was brought from Holland, and placed in the royal garden, where it thrived, and several offshoots were obtained from it. One of them was

confided to the care of a French naval officer named Declieux to carry it to Martinique. The vessel became short of water during the voyage, but Declieux shared his allowance with the plant and kept it alive. On reaching the colony, the seed it produced was divided among a few of the planters, and it afterwards became generally cultivated.—Such is the origin of the vast plantations which now cover the West India Islands and the warm countries of the American continent. The hothouse at the Museum, where this plant is growing, is kept by 4 stoves, to a heat of 15° Reaum., which is precisely the temperature of the natural climate.

HOW TO KEEP ROOTS INSIDE VINERIES.—The question of how to induce Vines to make as many roots as possible in the inside border, is one of very great importance to those who have to ripen Grapes—say in April, and who at the same time have no means of bottom heat from beneath. That Vines start more kindly and mature their crops both better and more rapidly when the roots are warm and comfortable, is a fact which admits of no dispute. It is, therefore, of vast importance that all the roots from them should be under the same roof, secure from wind and weather, and acted on by the same temperature as that to which the Vines are subject. As has already been remarked, the tendency of the roots is to go outwards through the arches into the outside border, and every precaution and means should be adopted to induce them to multiply inside. There are many Vines now subjected to early forcing that have not at first had their roots confined to the inside border, and a coaxing system is the only one that can be applied to their case. There is a vinery here which was planted in 1860, and its present crop will be the third which it has ripened in April. The inside border, even up to the back wall, is one mass of active rootlets close to the surface of the soil, while the Vines have all along had the run of the outside border as well. There is no bottom heat from any appliance whatever, either outside or from beneath the border. I attribute the abundance of roots inside to the annual application of some light open soil over the surface of the border close to the roots, and over all a sufficient depth of hard wood leaves to keep up for several months a nice genial warmth, and more especially to the leaves being left on all the summer. By this means the roots are enticed upwards to the top layers of soil, and the leaves being left on all the summer there is no chance of the roots being checked, as might otherwise occur if the leaves were removed when

the crop was cut. To this plentiful inside root-action I attribute the ease with which the Vines are started. In itself the vinery would by many be pronounced totally unfitted for early forcing, it being very flat and constructed after the fashion of the olden times with timbers fit for a frigate. Yet the Vines, though weak, owing to their having been early forced from the very first year they were planted, always show plenty of fruit that colors well, which must be attributed to the amount of inside roots more than to anything else. I know of nothing that will entice roots in any direction required more quickly than a light, rich, open top-dressing, and the application of a bed of leaves sufficiently deep to moderately warm the dressing, and I would recommend the plan to all who are desirous of inducing their Vines to make more roots in inside borders.—*Lon. Cottage Gardener.*

HYDRANGEA.—These are showy summer-flowering plants, and a few may be grown to assist in dressing vases, steps, or balconies. As these may, if kept rather dry, be put away under the greenhouse stage in winter, in spring they must be brought forward and have good-sized pots and plenty of liquid manure. The weak shoots must be thinned out, so that the principal shoots on which the next year's flower is to appear may be as strong as possible. The variegated variety is worth growing for its foliage; their flowers may be changed to blue by mixing iron filings and scales from the smith's forge in the soil. And very neat flowering specimens, only six inches high, may be had by taking off the points of the strongest shoots in September, inserting them in three-inch-pots. Tie up their heavy leaves to a small stick; water freely, so as never to allow them to flag; place under bell glasses till struck. The following season they will each produce a large truss of flower.

TREES OF THE PACIFIC COAST.—"Account of the Botanical Collection made by David Lyall, M. D., surgeon and naturalist to the North American Boundary Commission," by Dr. Lyall. The author gave an account of the general features of the regions traversed and of their botanical aspects, and concluded by some notes on their distribution of the principal trees met with near the 49th degree of latitude, and the elevation to which they reached between the Gulf of Georgia and the Rocky Mountains. *Pinus monticola* was found to be a common tree in the wooded valleys lying between Colville and the Rocky Mountains. *P. contorta* was very common in various situations in Vancouver's Island

and on the midland; on the east side of the Cascade Mountains it formed the great bulk of the forest between the altitudes of 4500 and 6500 feet, the size of large trees being about $1\frac{1}{2}$ foot in diameter, and 60 to 70 feet high; on the Rocky Mountains it was observed at 7000 feet elevation. *P. flexilis* was observed near the eastern summit of the Cascade Mountains, at 7000 feet elevation, when it formed the highest tree of the forest belt, and was exposed to the full force of the storms, so that it became quite stunted in habit, the trunk of the largest being about 15 feet high, bulging out a little at the base, and then tapering rapidly and spreading at top into a number of thickish branches; the seeds of this tree, which are about as large as a pea, and are sweet and palatable, were said to be eaten by the Indians. *P. ponderosa*, which extends from the eastern slope of the Cascade to the base of the Rocky Mountains, was found about Colville to rival in usefulness the Douglas Fir of the coast, and to be applied to most of the same purposes. *Abies Mertensiana*, the Hemlock Spruce of the axe-man, was one of the most common trees on the west side of the Cascades, and was also met with but not so commonly on the eastern side. *A. Menziesii* was plentiful all along the line from the Pacific to the Rocky Mountains, on the Cascade Mountains as high as 5500 feet, and on the Galton and Rocky ranges up to 6000 feet. The noble *A. Douglassii* was usually found with it; this last, a very giant in the Lower Fraser river district, became dwarfish on exposed promontories and at great elevations, and ceased to be common at about 5000 feet of altitude. *A. amabilis* was not uncommon on the Cascade Mountains up to 6000 feet, and on the Rocky and Galton ranges was found as high as 7000 feet. *A. nobilis* (or perhaps *balsamea*) was a large tree on the Cascade Mountains, the wood soft and easily cut by the axe, the bark covered with blisters containing a turpentine or balsam-like fluid. A new *Larix*, *L. Lyallii*, occurred on the Cascade Mountains at from 6500 to 7000 feet, at about 6000 feet on the Galton range and at 7000 on the Rocky Mountains. *L. occidentalis*, which was met with frequently between the Cascade and Rocky Mountains, was from its splitting easily applied to many of the uses fulfilled on the other side of the Cascades by the *Thuja gigantea* (or "Cedar,") such as making shingles, rails for fences, &c., the *Thuja*, which grows to a large size and is common near the coast, becoming scarce and diminished in the interior. *Juniperus virginiana* was found occasionally in Vancouver's Island and along the boundary up to the Rocky Mountains;

at Esquimalt one was observed 46 feet high and 5 feet 4 inches in circumference at 6 feet from the ground. *Quercus Garryana*, the only Oak seen, was plentiful at the south east end of Vancouver's Island, but was not found on the mainland anywhere along the 49th parallel. In the district of the Lower Fraser River, the trees most commonly met with, were: *Abies Douglasii*, several specimens of which in the neighborhood of Sumas were nearly 30 feet in circumference at 5 feet from the ground; *A. Menziesii*, 25 to 30 feet in circumference, and at least 200 feet high; *A. Mertensiana* common, and growing to a height of from 150 to 200 feet; and *Thuja gigantea*, of which one measured $26\frac{3}{4}$ feet in circumference at 6 feet from the ground, and was estimated at 250 feet high. This, and the Douglas Fir, were described as the most useful trees in the coast districts. Various parts of the "Cedar" or *Thuja* were said to be used by the Indians; the trunk to form their canoes, and when split into slabs, which is easily done, to build their permanent huts or lodges, while the stringy bark and integuments of the root are plaited into useful and ornamental articles of clothing and household utensils.—*Transactions of the Linnean Society.*

GREENHOUSE TROPÆOLUMS.—Supposing that we have four ordinary-sized tubers or roots of tricolor or Jarrattii, that we wish to grow each tuber in a separate pot, and are likewise desirous of increasing them whilst having as many flowers upon them as they can produce, proceed as follows:

Take some good fresh turfy soil, with a little fibry peat chopped pretty small, and a good portion of silver sand, all well mixed together, so as to be a nice fibry mixture, such as will not be too close or become sodden. Having the compost all ready, the next proceeding is to take four pots about 8 or 9 inches in diameter at the top, to drain them well, placing moss or some similar material over the drainage, and then to fill the pot rather more than half full of the compost. Place the roots into this, having the crown of the tuber all but covered, so that you can see when it begins to grow. A strong root will often give several shoots or growths. Let them grow on. When they are 6 or 8 inches long put in the stake or wire trellis on which the plant is to grow, as, if delayed longer, the growths of the plant might be injured in putting in the trellis, owing to their being covered with soil. The trellis having been put in, the next proceeding is to lay the young growth or growths across the soil in the pots, carefully covering them over with the

same kind of soil; and as they grow, go on turning them from side to side in the pot, gradually letting them rise higher to the top of the pot, and of course adding more soil each time. When done in this way, carefully bending them where there is a joint in the slender stem, they will generally form a little bulb at every joint.

Now to give an outline of how my friend grew his pots of Tropæolums. He generally had his in pots from 12 to 16 inches in diameter, and had the compost much the same as that which I have described. Into the large pots he often placed inverted three-inch pots at the bottom, and filled in an inch thick of potsherds. Over this he placed some moss, and then filled the pots three parts full or rather more before he put in the tubers. Into the largest pots he would put six or eight good-sized roots, just covering them over, and placing them in a circle about an inch from the top. After they were started and 6 or 8 inches long, he put in the top of a compactly-grown Larch tree, perhaps from 3½ to 4½ feet high, or the top of a Holly tree from which all the leaves had been carefully removed, and as the plant grew he covered them over with the same kind of compost, still inclining them towards the stem of the Larch tree on which they were to grow. He allowed them to ramble all over it, and in the course of time it had the appearance of a cone of 2½ or 3 feet wide at the base and 4 feet or more high from the pot. Trained in this way the plants had a charming effect in a conservatory during the spring months, and afforded a nice contrast when placed beside some of the white Azaleas on the one side and a nicely bloomed Rhododendron on the other, backed up with a Camellia, or even when placed alone upon the floor of a conservatory, where the pot could be seen and admired on every side.—G. DAWSON, in *Cottage Gardener*.

INFLUENCE OF LIGHT ON VEGETATION.—The influence of light upon the flowers, the leaves, and branches of growing plants is so manifest that it can scarcely have failed to attract the attention of the most superficial observer. The familiar instance of plants standing in the window of a dwelling-house being attracted towards the light, and, unless frequently turned around so as to expose every part of the plant to its influence, becoming one-sided and unsightly, is well known to almost everybody. Many flowers are peculiarly sensible to the effect of light. The annual Sunflower, *Helianthus annuus*, may be cited as an example. Its stem is somewhat compressed, apparently to facilitate the move-

ments of the flower, which, after following the sun all day, returns after sunset to the east to meet his beams in the morning. It was the opinion of Hales that the heat of the sun contracted the stem on one side, and thus occasioned the flower to incline that way; but if this were true, how should the flower return so completely at night? But this property of flowers following the course of the sun is not confined to flowers only; many leaves are influenced in the same way. A clover field is a familiar instance of this kind. Composite flowers, or those with radiate florets, are most sensible to the influence of light, as the Daisy, the Sunflower (already mentioned,) the Marigold, and numerous others belonging to different families, as *Nymphæa alba*, which opens and closes at pretty regular periods of the day; also the *Anagallis arvensis*, or Poorman's Weather-glass, which latter, however, loses its sensibility in continued wet weather. On the other hand, the leaves of leguminous plants, especially those with pinnated leaves, are more sensible to the influence of light than those of any other tribe of plants. Indeed, in a vast number of cases it would appear to be the sole cause of their expansion; for in the absence of light the leaves droop, and actually fold over each other.

SCIENCE OF COLOR.—M. Buffon, a good many years ago, made a very interesting discovery in the science of colors, the consideration of which cannot fail to aid the flower gardener in the disposition of the materials with which he has to deal, and will at all events make it less likely that any great mistake will be committed. He discovered that if a wafer is placed on a white sheet of paper and steadily gazed on for a few seconds and the eye then removed to another part of the paper, a spectrum of the same size as the wafer and of its contrasting color is seen on the paper. The spectra are, however, rendered more distinct when the wafers are looked at on a dark ground, and the eye then removed to a white ground.

This is probably the simplest and surest way of determining what color will most nearly contrast with another. This simple fact is just the reason why black type is more comfortably and more easily read on a white ground than would red type, for red would have a contrasting green spectrum floating before the eye on the white ground. White being the contrast to black, the spectrum is prevented in such a combination. By this simple process any one can find out contrasting colors when it is desired to plant according to the law of contrast.

PROPAGATING THE MISTLETOE.—The seed of Mistletoe will vegetate on the bare handle of a house-broom quite as readily as on the bark of an apple tree branch. If you fasten it with a bit of putty on a deal-board, moss, and moisten it early in the summer, it will also vegetate on the board or on a bar of iron; then it dies, for the suckers at the end of the roots, as you may call them, find not a proper place to fasten to.

The belief and notion on this subject were very different from what is stated at the time referred to—five and twenty years back. They amounted to this, as far as I recollect: That Aristotle and Pliny among the ancients, and Dr. Walker among the moderns, considered that the Mistletoe was propagated by the excrements of the birds which had fed on the berries, supposing that the heat of the stomach and the process of digestion were necessary to prepare the seeds for vegetation. Ray first suggested the idea of trying by experiment whether the seed would vegetate without passing through the body of a bird; and at his suggestion Mr. Doody, an apothecary, of London, inserted with complete success a seed of the Mistletoe into an incision made in the bark of a White Poplar tree which grew in his garden. This, Professor Martin observes, has been since done by many persons, both by rubbing the berries on the smooth bark of various trees, and by inserting them in a cleft or in a small hole bored on purpose, which was the mode adopted by Doody, the first person who really sowed this seed. The celebrated Du Hamel, arguing that the seeds of the Mistletoe, like the seeds of other plants, would germinate any where, provided they had a suitable degree of moisture, made them sprout, not only on the bark of different kinds of living trees, but on dead branches, on bricks, tiles, stones, wood, and iron, down to mother earth; but though they germinated in such situations, they did not live any time except on the bark of living trees. M. Du Rochet made seeds of the Mistletoe germinate on the two sides of the frame of a window, and in both cases the radicles directed themselves towards the interior of the room, as if in quest of darkness.—*Cottage Gardener.*

HISTORY OF THE DAHLIA.—The first notice we have of the Dahlia is given by M. Hernandez in his history of Mexico, published in the year 1651, who figures and describes two species under the name of *Acocotli*, as he informs us it was called by the inhabitants, which he found growing spontaneously upon and around the mountains of Quauh-nahuac. It is afterwards noticed, in 1787, by M.

Thiery Menonville, in the history of his journey to Guaxaca, where he was dispatched by the French Government upon the perilous mission of stealing the Cochineal Insect from the Spaniards. He tells us, that having entered one of the gardens in the vicinity of Guaxaca, and adjoining to a plantation of Nopals, upon which the insect feeds, he was much struck with its beauty. In the autumn of 1790 a plant, which had been introduced into the royal garden at Madrid the previous year, produced blooms, and was described by Cavanilles, in his "*Icones Plantarum*," published in the early part of 1791. Upon this introduction of the plant to Madrid, the Marchioness of Bute, then temporarily residing there, procured seeds or roots, and immediately transmitted them to this country; unfortunately, however, shortly after their arrival, they were totally lost. About the year 1802 the celebrated traveller and eminent botanist, Baron Humboldt, discovered it growing upon high sandy plains, 5000 feet above the level of the sea, as described in the "*Voyage d'Humboldt et Bonpland*," published in 1810. In 1802 Cavanilles forwarded roots to Paris, where, we are informed, they were planted in large pots and placed in a frame, but that they did not bloom until the end of the autumn of 1803. In 1804 they were figured and described at length by M. Thouin, in the "*Annales du Museum d'Histoire Naturelle*." In 1810 Professor Willdenow describes the Dahlia in his "*Species Plantarum*," and changes its name to *Georgian*, supposing that the name Dahlia had been applied to a totally different genus previously to its adoption by Cavanilles to the present genus, in which, however, he was doubtless mistaken, as the genus he alludes to is called *Dalea*, and was first described by Professor Thunberg in the "*Skrivter of Naturhistorie Selfskabet*," published in 1792, whilst Cavanilles' Dahlia was published in 1791. But notwithstanding this, on account of its resemblance to *Dalea*, M. de Candolle and some other eminent botanists adopted Willdenow's name of *Georgiana*; the original name, however, had become so generally established, besides having the priority of publication, that these efforts to supersede it failed. In May, 1804, seeds were reintroduced from Madrid by Lady Holland, which, under the care of M. Buonaluti, prospered, and during the following autumn several varieties bloomed in the gardens at Holland House, a purple one of which was figured in the "*Botanist's Repository*." From these kinds M. Buonaluti succeeded, in 1805, in saving a number of seeds, which were liberally distributed. The extension of sorts, however, in

this country progressed tardily until the peace of 1814, when numerous sorts were imported from France, Germany and Holland, where the propagation of new varieties had been more successfully pursued, especially by Count Lelieur at Paris, M. Otto at Berlin, and M. van Eeden at Haarlem. The introduction of these kinds stimulated several intelligent cultivators to more constant attention in the multiplication of varieties, particularly Mr. J. Wells, gardener to William Wells, Esq., of Redleaf, near Tonbridge, in Kent, and Mr. David Douglas, gardener to Lady Grantham, at Putney Hill, and the most peculiar success attended their efforts, especially the former, who raised the first double dwarf Dahlia. Subsequently, gradually improved kinds were annually produced, until they have at length attained a very perfect and unique shape. The most decided advance, however, towards perfection was made in 1832, by Mr. George Lynes, gardener to — Perkins, Esq., of Springfield, Surrey, in raising that generally known, and by all cultivators universally admired flower, Springfield Rival. This variety was purchased by Mr. Inwood, of Putney Heath, for ten guineas; but since then the value of a new and superior flower has most remarkably increased; for the stock of one kind no less a sum than £500 was asked, and 200 guineas refused for another. The collection of named different kinds, obtained from numerous sources, cultivated in the garden of the London Horticultural Society, in 1826, enumerated but 60 that were then considered good ones, the principal portion of these being semi-double; and yet since that period so rapid and immense has been the increase, that the list of our own varieties at this time is 1215, all double, which we believe to be considerably more extensive than any other.

THE TOI, or *Tahitian Chestnut*, as it has been called by voyagers, (*Inocarpus edulis*, Forst.), is one of the common trees, and when fully grown has a most venerable aspect. Sixty, often eighty feet high, the Toi bears a thick crown of oblong leathery leaves, small white flowers emitting a delicious perfume, and kidney-shaped fruits, which contain a kernel, resembling Chestnuts in taste. The kernel is either baked or boiled, and eaten without further preparation. The stem is most singular. When young it is fluted like a Grecian column; when old it has regular buttresses of projecting wood. The roots of old trees appear above the ground, somewhat like those of the Bald Cypress of North America. Ferns, Orchids, etc., frequently take up their abode on the soft bark.—*Seemann*.

W. JERSEY FRUIT GROWERS' ASSOCIATION

From the report for the year ending, February 1, 1864, recently received from the Secretary, we extract the following report of the Chairman of the Fruit Committee, Mr. Nathan Leeds, of Cinnaminson, New Jersey. It is a model report, confining itself to a statement of the progress and condition of fruit culture in his district.

To the President of the West Jersey Fruit Growers' Association.

In presenting this, the first Annual Report of the General Fruit Committee, it is much to be regretted that the committee representing the townships of Evesham, Delaware and Newton, failed to make any report to the chairman, and of course, the statistics embraced in the general report, are of a much more meagre character than if all the townships had been represented.

The reports from Burlington, Chester and Cinnaminson, represent that there was under cultivation, and producing crops the past season, 272 acres of Strawberries, viz.: Burlington, 200; Chester, 47; Cinnaminson, 35; yielding 12,596 bushels of fruit, and producing the sum of \$45,342 60. The general average yield per acre, is 55 bushels, viz.: Burlington, 40; Chester, 68 and Cinnaminson, 56. The average price obtained \$3 60 per bushel, or 11½ cents per quart, being about 50 per cent. greater than for the last five years.

One unusual large crop of Hovey's Seedling and Lady Finger, is reported from Chester as having produced from 146 acres, 8000 quarts, or at the rate of 166 bushels per acre.

The leading varieties cultivated are, Wilson's Albany, Lady Finger, Hovey's Seedling, Iowa and Triomphe de Gand.

When we take into view the very low average yield per acre of only 55 bushels, when it is well known that 200 can and has been produced, it naturally suggests the idea that there is some radical error in our mode of cultivation. The thorough preparation of the soil before transplanting is of the first importance. Ground deeply plowed in the fall, and liberally enriched with a well prepared compost, appears to be the best condition for the soil to be put in, before transplanting in the spring.

One of the most common errors committed in planting out Strawberries is, in not taking into account, the adaptation of the varieties to the particular kind of soil upon which they are to be planted. For while the Early Scarlet, May Queen, Iowa, Downer's Prolific and some others, will succeed quite well on a light sandy soil, it is labor lost to plant out Triomphe de Gand, Scarlet Magnate,

Lady Finger and nearly all of the large and finer varieties on any but a good strong loam.

Another error is in allowing the vines to become too thick on the ground. About 80,000 plants can be set on an acre, 12 by 5 inches apart in beds $3\frac{1}{2}$ feet wide, with an 18 inch alley between the beds; and is confidently believed, that if this number of plants was systematically distributed over the beds, so as to allow of more thorough cultivation, much better results would be produced than from the random system generally adopted, and where in some instances five or six times the above number are allowed to grow.

It is believed that if the Strawberry growers of the Association, will take the trouble to observe carefully, year after year, and compare notes from time to time, that some decided improvement may be made in the cultivation of this crop, and more satisfactory results arrived at.

New varieties have multiplied so rapidly in the last few years, that it is much more difficult to decide what to plant than it was when Hovey's Seedling was almost universally esteemed the best. Out of some 300 native and foreign varieties advertised for sale, probably not more than twenty of them are worthy of any attention for general cultivation for market. The foreign varieties have proved, with very few exceptions, utterly worthless in this locality. Among the new ones lately introduced, French's Seedling is attracting more attention than almost any other, owing to its extreme earliness, large size, fine appearance and general good qualities. The Russell, the Tribune prize berries—Col. Ellsworth, Monitor, Brooklyn Scarlet, and the Agriculturist are all looked forward to with great expectations.

Of the Raspberry, there were under cultivation, and producing crops 40 acres, viz. : Burlington, 25; Chester, 7; Cinnaminson, 8. The yield per acre on a general average, about 33 bushels, and the average price obtained 14 cents per quart, or \$4.64 per bushel. The varieties cultivated, are the old Purple-cane, the two kinds of Allens, the Kirtland and the Black Raspberry.

Among the new varieties, the Philadelphia holds the most prominent position, being perfectly hardy, a very strong grower, greatly productive and of large size, not so fine in appearance and quality as the Allen and some others; but it bids fair to be the great market berry for years to come. Nearly all the foreign varieties and the descendants have proven worthless for a market crop. None but the hardy native varieties are worthy of attention for general cultivation for market.

Of the Blackberry in the townships named, there are reported 99 acres in bearing the past season, viz. : Burlington, 75; Chester, 11 and Cinnaminson, 13 and yielding 5264 bushels of fruit, or an average of about 53 bushels per acre, viz. : Burlington, 50; Chester, 68; Cinnaminson, 66. The price obtained was about 10 cents per quart or \$3.30 per bushel, amounting in the aggregate to \$17,915 70.

The New Rochelle and Dorchester are the only kinds that have so far been found adapted to field culture. The latter ripening six or eight days earlier than the other, is preferred on this account by some for a market crop; although not near so large, nor yielding so much per acre.

The aggregate yield of the three crops of Strawberries, Raspberries and Blackberries, amounts to 19,482 bushels, and produced the sum of \$70,021 78.

Of other fruits, no reports have been received. The Apple crop appears to have been almost an entire failure, except some of the early varieties, as the Maiden's Blush, Sweet Bough and the Porter. The latter a new variety in this vicinity, is spoken of very highly as being very uniform in its crops, by those who have tested it.

Pears are beginning to be much more cultivated than formerly, and in a few years will be tested as to their adaptation to our soil and locality. At present but little can be said in regard to them, being but few orchards in bearing. The Bartlett, Louise Bonne de Jersey and Duchess, appear to do well in most localities.

In the several reports but one Peach orchard is noticed; this is in Cinnaminson, and occupies from forty to fifty acres, and there were marketed from it the past season about 8000 baskets of Peaches, at an average price of 80 cents per basket.

The conditions upon which Peaches can be produced, appear to be the thorough destruction of the *borer*, by a close examination of the trees, at least twice a year.

The very frequent failure of the Apple crop is a subject that should claim the attention of all fruit growers and agriculturists in the State. Nearly every farm has its orchard, and yet the Philadelphia market, and even for our own home supply, we are mainly dependent on New York and New England. This naturally suggests something wrong, either in the treatment of our orchard, or in the selection of varieties planted out, not being adapted to this locality. It would be well for the members of the Association to compare notes on the different modes of treating Apple orchards, and also the varieties that have proved to be the most certain and regular bearers.

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T. THOMAS MEEHAN, EDITOR.
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Hints for September.



FLOWER-GARDEN AND PLEASURE-GROUND.

Attention should be given at this season to the flower-beds, by noting what has done well in your locality as a summer-blooming plant, as no time should be lost in procuring a stock for next year.—The best way to propagate all the common kinds of bedding-plants is to take a frame or hand-glass and set it on a bed of very sandy soil made in a shady place in the open air. The sand should be fine and sharp, and there is, perhaps nothing better than river sand for this purpose. The glass may be whitewashed on the inside, so as to afford additional security against injury from the sun's rays. Into this bed of sand cuttings of half-ripened wood of the desirable plants may be set, and after putting in, slightly watered. Even very rare plants often do better this way than when under treatment in a regular propagating-house. In making cuttings, it is best to cut the shoot just under a bud,—they root better, and are not so likely to rot off and decay. A cutting of about three eyes is long enough for most strong-growing things, such as Geraniums, Fuchsias, &c.

Small-growing things, of course, will take more buds to the one cutting. From one to three inches is, however, long enough for most cuttings. They should be inserted about one-third of their way under the sand, which latter should be pressed firmly against the row of cuttings with a flat piece of board,—not, however hard enough to force the particles of sand into the young and tender bark, which is often the first step to decay. For a few cuttings, they may be inserted with a dibble; but

where many are to be put in, it saves time to mark a line on the sand with a rule or straight edge, and then cut down a face into the cut, say one or two inches deep, when the cuttings can be set against the face like box-edging. All amateurs should practice the art of propagating plants. There is nothing connected with gardening more interesting.

We have often given the principles of successful hedging, the main ones being to repress excessive growth at the top by repeated summer pruning and training in a conical form, while the side and basal shoots should be suffered to grow as much as they possibly will, without let or hindrance, during the summer season. As soon as the leaves begin to fall, these lowermost shoots should be brought into shape, so as to render the hedge perfect.

We have said a good deal about ornamental hedges in past numbers; but not perhaps, as much as the subject deserves. Not only do they make the very best kind of boundary fences, and form in themselves beautiful objects, but they have a great use in small places, in breaking off long and uninteresting scenery, and, by dividing perhaps one grand view into innumerable parts, make a small place seem very large indeed.

Many kinds of bedding-plants of succulent or sub-fleshy growth, can be taken up from the flower-beds on the approach of frost, and cut in, say one-half, and packed thickly in boxes of soil, and kept in a rather dry and cool cellar through the winter. Such fine plants make a much better show in the beds the next year than plants of the present season's striking. A cellar is one of the most useful appendages to a garden. Were we to have only one choice, we should prefer a cellar to a greenhouse for its general usefulness.

As soon as Dutch bulbs can be obtained, they should be at once planted. Of all fertilizers, well-rotted cow-manure has been found best for them, and especially if mixed with a portion of fine sand. They should be set about four inches beneath the surface of the ground, and a little sand put about the root when being planted. A very wet soil usu-

ally rots the roots, and a dry one detracts from the size of the blooms. A soil in which garden vegetables do well, is one of the best for these plants.

In many parts of the Northern States the leaves will have changed color previous to the incoming of winter, and the planting of trees and shrubs will commence as soon as the first fall showers shall have cooled the atmosphere and moistened the soil. Further south, where the season will still remain 'summer' awhile longer, the soil may, at any rate, be prepared, that all may be in readiness when the right season does come. When there is likely to be a great deal of planting done, and only a limited number of hands employed, planting may commence early in the month. What leaves remain on should be stripped off, and the main shoots shortened. They will then do better than if planted very late. In fact, if planting cannot be finished before the middle of November in the Northern and Middle States, it is better, as a rule, deferred till spring. In those States where little frost occurs, this rule will not apply. The roots of plants grow all winter, and a plant set out in the fall has this advantage over spring-set trees, that its roots in spring are in a position to supply the tree at once with food. This is, indeed, the theory fall planters rely on; but in practice it is found that severe cold dries up the wood, and the frosts draw out the roots, and thus more than counterbalance any advantage from the pushing of new roots. Very small plants are, therefore, best left till spring for their final planting. The larger things, and which we recommend planting in the fall, should be pruned in somewhat at planting. The larger the tree, the greater in proportion should it be cut away.

FRUIT GARDEN.

One of the most interesting employments connected with this department, next to presenting a friend with a fine fruit, or eating it yourself, is to gather it. It requires some judgment to do this properly. Most of what we see in market of pears or apples are gathered too soon, while the amateur goes into the opposite extreme of leaving them on too long. The proper time to gather them is when they part easily from the tree on being gently raised up. But fruit-gathering ought to commence very early in the season, namely, as soon as insects have evidently damaged the fruit. An amateur should go over his apple and pears once a week after they reach a respectable size, and take off all the unfortunate specimens, which should be handed to the cook, or sent to market. This process would have

a tendency to keep down the number of insects, by destroying their larvæ before they reach their final stage of development. At this season nothing will be left on the tree but perfect fruit. They should, of course, be all carefully gathered by hand, and great care taken to have none of them the least bruised. They should then, if summer fruit, be placed in a cool room, and a cloth thrown over them for a few days, when those who never ate an early apple or pear before so treated may wonder to what species of fruit it belongs. Late fruit must, of course, be left on as long as possible, so that frost does not injure them; but all kinds should be occasionally tried by the lifting process we have described, and taken off at the first sign of maturity they afford.

VEGETABLE GARDEN.

The main crop of Spinage should now be sown. Properly cooked, there are few vegetables more agreeable to the general taste, and few families who have gardens will wish to be without it. It is essential that it have a very well enriched soil, as good large leaves constitute its perfection as a vegetable. As soon as the weather becomes severe, a light covering of straw should be thrown over it. A few Radishes may be sown with the Spinage for fall use.

Turnips also may still be sown. In fact, if the soil be rich, a better quality of root for table use will be obtained than if sown earlier.

Celery and Endive will still require the attention in blanching described in former hints.

Cabbage and Cauliflower are sown this month for spring use. The former requires some care, as, if it grow too vigorous before winter, it will all run to seed in the spring. The best plan is to make two sowings—one early in the month, the other at the end. The rule is to get them only just so strong that they may live over the winter in safety. Many preserve them in frames; but they should have wooden sashes or shutters instead of glass, so as not to encourage them to grow much.

Cauliflower, on the other hand, cannot well be too forward. Most persons provide a pit of stone, bricks or wood, sunk five or six feet below the surface of the ground, into which leaves, manure, or any waste vegetable matter is filled. When quite full, it is suffered to heat a little, when it will sink somewhat and have more material added to it; about six inches of good rich loam is then placed on it, and early in November the Cauliflower planted out. The object in refilling the leaves so often is to insure the plants remaining as near the glass

as possible, which is very essential in the growth of Cauliflower. Lettuce is treated in the same way, and seed should be sown now to prepare for the planting. The Cabbage Lettuce is the kind usually employed.

HOT AND GREENHOUSE.

In the hothouse, the *Eschynanthus* will soon be the chief ornament of this division. Their number has increased so that they have become quite a feature. If the pots seem full of roots, they may still have another shift. They prefer very fibrous peat; or, if that cannot be had, turfy loam, mixed with a portion of coarse moss. They will, however, do pretty well in small pots. *Achimenes* and *Gloxinias*, as they go out of flower, should be kept dryer and cooler. Look well after a good stock of *Pentas*, *Cestrum* and *Habrothamnus*; they will go far towards keeping up the interest of the department in winter. *Justicias* and *Acanthaceans* plants generally will probably require another shift if fine specimens are desired. The atmosphere, if the house be light, can scarcely be too moist for them.—*Plumbago rosea* is one of the most valuable stove plants we know for winter-flowering; it requires a strong heat. *Clerodendrons*, as they go out of flower, should be kept in a very airy situation, and rather dry, preparatory to being cut down and treated like a *Pelargonium* for another year. Many *Begonias* will be past their best flowering stage; very little watering serves them; they are very liable to damp off by incaution in this respect. It is difficult to lay down rules for orchideæ, so much depending on the circumstances under which they are grown. Those who have finished their growths—as many *Dendrobiums*, *Oncidiums*, *Catasetums*, etc., whose flowers appear just before new growth—should have their supplies of moisture gradually lessened. The temperature, also, is better gradually lowered to a few degrees, and they should be allowed more light than usual. The period when they are about completing their growth is the most critical, as any check at this time spoils the prospect of much blossom for next season. Those which flower from the young growth, as *Catleya*, *Laelia*, *Broughtonia*, etc., will require their moisture and heat rather increased than otherwise till after their flowering. *Vandas*, *Angræcums*, *Saccolabiums*, and other strong-rooting aerial kinds, will require constant humidity, until it is evident, from the points of their roots, that they desire to stop growing. We are often asked 'how often orchids require to be syringed?' If the situation in which they are growing be favorable,—that is, retains in its atmos-

phere a regular humidity,—they will require very little attention; in many cases, not requiring the syringe once a week. Where this cannot be effected, the syringe must be oftener applied. As a rule, I think no better one could be offered, than to syringe orchids just so much as will barely keep moss attached to their block and baskets green and growing. The real terrestrial orchids will require no moisture at all after they have completed their growths, until they show signs of pushing again. Care against checks in temperature and humidity, is one of the secrets of successful orchid growing. Those which are at rest do well in a temperature of 60° at the lowest. Those which are growing well should be kept at about 80°.

In the greenhouse, repairing and thorough cleansing must not be delayed. Painters say this is the most advantageous month to paint wood-work—Whenever the night temperature falls to 40°, any tender plants in pots should be housed, without waiting for 'the first week in October.' Things nearly hardy, as *Azalea*, *Rhododendron*, *Oranges*, etc., do best out 'to the last.' Any desirable plant for forcing, that may be growing in the open border, if potted early in the month, will do very well for that purpose.—*Weigelia rosea* does excellently this way; as also does *Jasminum nudiflorum*, *Forsythia viridissima*, many *Spiræas* and *Persian lilaes*. *Roses* and other things intended to be forced early, should have as much air, and be kept as dry as possible without injury. *Hyacinths* and other bulbs should also be potted as soon in the month as they are obtained; the former are best planted an inch deep. The earlier bulbs are potted the finer they flower—you may get *Catalogues* of any number of kinds or colors at the *auction marts*. If you get ten per cent. as represented, when they flower, you will be favored. *Mignonette*, *Rodanthe Manglesii*, and similar ornamental annuals essential for winter blooming in well-kept houses, should be sown at once. Many things for next season's flowering must not be forgotten. The *Pansy*, *Calceolaria* and *Cineraria*, are in this class. Plants of these that have been kept over the summer, will require a re-division, and kept in a close frame for a few days afterwards, till they get re-established. Propagation, of all things, will still require constant attention. It should always be an aim to possess one duplicate plant, as a provision against accidents. In many cases, young plants are preferable to old ones; so that the old ones may be destroyed when these are obtained.

Communications.

OLD AMERICAN HORTICULTURISTS.

BY M., PHILADELPHIA.

The late DR. W. DARLINGTON will ever be held high in the esteem of American Botanists and Horticulturists for his biographies and sketches of our first pioneers, as we may say, in our pleasant pursuits.

On reading again, recently—for it is a work we never tire of recurring to again and again—his “Memorials of Bartram and Marshall,” it appeared to me there were many gaps in our history that were yet unfilled, and I could not but regret that the Doctor was not still among us; or that he had not received more materials from those of us who could have collected them for his highly polished and cultivated pen.

There is one man in particular to whom much credit is due, but of whom I have never seen any thing in print; and this sketch is written of him rather to get a fuller account from old botanists or horticulturists still living, than from any great value of the few facts about him I am able to communicate.

The subject of this sketch was named KIN, or KING, and was employed by some German horticulturists to come here and collect seeds for them. I have never learned when he first arrived in this country, but from the trees I have seen collected by him, which are now passing into decay, he must have been contemporary with William Bartram and Marshall,—possibly even with John Bartram. The last I can learn of him is that he was seen in Germantown in 1816, and from that time he seems to have disappeared.

All around and through Germantown are many trees collected by him. In one place is a very large *Virgilia lutea*, of which, as I am writing this chapter on the spur of the moment, I am unable to give the exact measurement, but which is probably seven feet in circumference. In another place, is a large *Magnolia acuminata*, nine feet in circumference, and perhaps eighty feet high, and, to my recollection, as fine a specimen as its better known comrade in Marshall or the Bartram Gardens. In another part of Germantown, from the same source, is a *Pecan Nut*, probably eighty feet high and six feet in circumference. But what is regarded as about the choicest thing of all, is a *Magnolia macrophylla*, a noble specimen, which King is said to have brought in his pocket, wrapped in damp moss,

from North Carolina. With the exception of a few trees in some open lots near Raleigh, N. C., I have never seen trees in their native places finer than this one is. In another part of the town is a magnificent specimen of *American Yew*, also believed to have been introduced by King. It is probably the finest specimen of the kind in the world. This species, as is well-known, never grows high, but rather spreads horizontally. In the centre this specimen is about five feet high, and forms a circle about *thirty feet* across. We would give hundreds of dollars to be the fortunate owner of such a noble old plant. When covered with its beautiful coral berries set off by its sap green leaves, as I once saw it when passing, no prettier object can be desired in the vegetable kingdom. We pass over many of these plants to describe the man.

King was a most remarkable specimen of humanity. Full six feet high, and broad shouldered, with enormous bones, but with *no flesh on them*, he was literally the “picture of death.” He dressed like an Indian, and he went altogether by the cognomen of the ‘Wild man.’ His habits were altogether wild,—no doubt the result of his many year’s explorations in the great wilds,—and whenever here, he was evidently not at home, nor happy till he went back again. So far as I can learn, he had no regular home in Philadelphia,—coming there only to send off his seeds and plants to Europe, and then off to the back countries again. He made the whole of his journeys on foot, and when it is remembered that we have here the plants of the Rocky mountains, Kentucky, North Carolina, and other distant points, collected by his hands, some idea may be formed of the vast labors of this devoted Son of Science.

When he came to Germantown he was the guest of a citizen named Kurtz. Kurtz was a German who emigrated to this country when young from his native land, settled in Germantown, and ultimately owned considerable property there, which supported him handsomely, and left him free to follow his horticultural and botanical tastes. His garden was situated near the main street, and what is now Cheltenham Avenue,—Rorer’s store being about the center of his garden. Of this garden, which at that time contained every rare tree, plant and shrub of the hardy kind that could be got together, not a trace is now left but a huge English Horse-Chestnut, standing on the sidewalk of the avenue, and which is, perhaps, the largest in the country. The plants were set in the garden, without any arrangement, wherever there was space; and though the garden was by no means a large one, when the

enormous number of its plants was considered, so thickly strewn were these floral treasures, that it was with the greatest difficulty that the owner, who spent the whole day working among them, could be found.

Kurtz was a peculiar man. One of his characteristics was to set fashion at defiance. What he thought was right he would do, and he scorned to be led by public opinion. He was particularly noted for his indifference to dress, but the scores of friends who enjoyed the riches of his well-stored mind and upright character, soon learned to forget the rugged exterior of the generous man. He never sold a plant, but gave freely of his riches to all. Kurtz died in 1816, and poor King never came about Germantown much after.

There was, however, another worthy Son of Horticulture who had a very fine garden, and who shared with Kurtz his friendship for King and his seeds. This was another wealthy German named Meng. His garden was near where the railroad terminus in Germantown now is; and the immense Linden tree in the street near there, was certainly planted by him, as possibly were many of the other large trees still existing there. Meng's garden was much larger than Kurtz's; and while the latter paid the most attention to shrubs and plants, the former boasted of his very fine lot of trees, which at that time, was inferior to very few collections in the country.

There is one thing about Meng's garden that is particularly gratifying. While Kurtz's has entirely disappeared, and most of the rare trees in most other old arboretums in the country are fast losing their specimens, with no friendly hand to replace them with younger ones or add new ones, this property has fallen into hands which know how to care for them; and I am informed that the present proprietor, with the love for the original trees held by his predecessors, still adds to the list any new or rare tree he can obtain.

Meng must have died a year or so after Kurtz, and what became of King after that your correspondent knoweth not.

SCIENCE IN SPORT.

BY J. STAUFFER, LANCASTER, PA.

(Continued from page 197.)

After penning my article in the July number, as I passed and repassed under the arbor of the grape-vine, where I first noticed the 'Zouaves,' on the 8th of June, I found them occupying the same lair, from whence I had cut their empty egg cases. I

became interested to observe their concern for the vandal-like removal of their cocoonery; but as I closely inspected their cautious movements, sparing with their antennae, and reaching out like boxers or fencing masters, with their long forelegs, or kicking out when menaced from the rear, I soon found that the strategic movements, parries and reconnoissances as feelers, were for the purpose of one endeavoring to get the advantage of the other, or in self defence. It amused me some, to notice their cautious movements, and front, flank and rear attacks interchangeably, as if each was intent upon getting the advantage of the other. Observing a number of dried spider-like carcasses, of those whose juicy abdomens had given nourishment to their more fortunate fellows of the same brood; these latter grew more portly at the expense of their weaker brethren—alas! do even these insects manifest that depraved character of corrupted humanity: where one fattens upon the rightful juices of his fellow, simply because he spurns all the laws of justice, intent only on self-aggrandizement, and void of all principle of equity. Yes, there are regular cannibals, and kept together during a period of two weeks, not because of their social disposition, but for the purpose of feeding upon one another; which resulted in the fact, that the one hundred became reduced to about twenty. After shedding their skins, and somewhat changing their dress, they began to disperse in quest of other food.

In speaking of the squash bug, I inadvertently referred these insects to the family Pentatomidae. They belong, however, to the family *Reduviidae*. These insects vary greatly in size as well as in general appearance, coloring, etc. The *Prionotus novinaris* is, perhaps the largest species of the family, and differs greatly in its several stages.

The *P. serratus*, or the Wheel-bug, (so named in the West Indies, from the singular prothorax circularly elevated, and toothed like a cog-wheel), is stated by Kirby and Spence, on the authority of Major General Davies, to be able to communicate a sharp electric shock.

Whether our *Prionotus* has this property I am not prepared to say. I do know, however, that they can inflict a severe wound with their curved lance, sheathed within the proboscis, so that I prefer handling them with a pair of forceps.

This family (of Heteroptera) consists of numerous genera of terrestrial species. They have a short, thick, naked, and curved rostrum; the labrum exerted; the head narrowed behind into a more or less elongated neck, and furnished with two large prominent eyes and two ocelli; the antennae are

of moderate or considerable length, with the terminal joints slender; the prothorax is often spined as well as more or less completely divided into two parts; the legs are long, and fitted for running; the tarsi 3-jointed and simple, the basal joint being very short; the anterior tibiae, in some species, are terminated on the inside by an oblique pulvillus or spine, serving apparently to assist the raptorial habits of the species, which are more pre-eminently insectivorous than any of the other terrestrial species. By these tokens they are readily recognized, and, bad as they are, morally speaking, it seems to take one evil to keep another evil in check: or, 'one rogue to catch another;' hence, I presume the reason we have so many in high places, and he who can succeed in over-reaching his neighbor without being subjected to legal action or conviction, is a '*shrewd gentleman*;' while the simple-hearted, honest man is but a tool or '*old foggy*.'

MR. HOOKER'S TANKS.

From among a lot of communications on the subject, we select the following extracts. The first is from Mr. W. SAUNDERS, Washington, D. C.:

"In looking over the July number of your *Monthly*, I observe an article on heating with water in cement tanks, and, moreover, that it is patented.

Now, I am building a Propagating-house here, and intended to get my bottom heat by using cement tanks. That this intention was not suggested by Mr. Hooker, you will readily understand when I state that you have seen a glass structure under my management, heated in that way.

Will I be subject to a 'violation of a patent right' if I heat my house by a mode that I have seen in operation about 20 years ago?

I further can say, that I had one in operation in New Haven, in 1848. Can I not build one now without paying a right to do so? What do you think about it?"

We supposed Mr. Hooker's claim was not so much for the tank, as for *laying it in the ground*, and have since the following from Mr. Saunders:

"The house I alluded to was heated with a cement tank laid on the ground. The tank was simply a square brick trough, lined with cement, finished in a circular manner inside, and covered with slates. The boiler was placed at one corner, in rear of the house, with short attachment pipes into the tank: the tank going all round. As is usual, we had a front shelf over the tank; this portion was enclosed so as to return the heat; on the shelf, (which was first covered with a couple thickness of mats, the shelf being sparred as usual), a layer of white silver

sand was laid. Here we grew our young Calceolarias, plunging the small pots about half their depth in the sand, which, of course, was gently heated. The recollection of the growth of those plants has given me great uneasiness ever since simply because in all my calceolaria growing I have never been able to approach it. Here, then, was a propagating-bed, and I have made many a propagating-bed since by enclosing flues and pipes in the same way.

At New Haven, when I went first to Mr. Bostwick's place, I found a small Propagating-house that had been put up by my predecessor. The tank was made of zinc, and it bent and bounded, and thumped and made so much noise when heated, and, withal did not answer the purpose. I therefore made with my own hands, a wooden trough, and lined it with cement, to prevent leakage, which answered well so far; but the boiler being a miserable trifling affair, that would not hold half a peck of coals (it was a cylinder), I abandoned the whole thing.

But I have recalled to mind another suggestion, that I once was about carrying into practice at Baltimore. As it never was put in execution, however, it is hardly worth while to mention it. Mr. Winans' conservatory was so situated that pipes or any other incumbrance would have interfered much with the arrangement. The paths were winding,—very tortuously winding; and the suggestion of putting pipes in a channel below them could not be entertained, on account of expense, as a model in which to cast the pipes to suit all the turnings would have to be made. I suggested to put in a cement trough, which could easily have been made to follow all the windings; and, although I had a considerable portion of the path excavated, (which excavation is still in existence, I presume), it was never carried out, as another mode was adopted. But I am very sure the mode would have answered, and would be a capital way of running hot water in circuitous routes."

The next is an inquiry from "FOX MEADOW": "What is meant by *water lime*? I made the inquiry direct of Mr. Hooker. The following is the reply:

'Dear Sir: Enclosed please find "Directions" for making my Tanks.

The lime I use is common Hydraulic Lime,—or, Water Lime, as we call it. Any lime that will make a cistern will make a tank. You will find the plan a most excellent one, and exceedingly economical. Yours, Resp'y. H. E. HOOKER.'

He calls it 'Hydraulic' Lime; and that 'any lime that will make a cistern will make a tank.' I

certainly never heard of any lime that would make a cistern *hot-water* tight. Hot water tanks were made this way in England 30 years ago, and abandoned through no remedy being found for this objection. Can you tell me if Mr. Hooker's tank is made of lime mortar or of ordinary American cement?"

We do not know any 'water lime' but the Rosendale cement. Common lime, by using lime-water for slacking, or by incorporating more or less of siliceous or alumina, as the case may be, may be made harder or softer,—or by peculiar ways of slacking, as by more or less water,—may be rendered of different degrees of crystallization. Mr. Hooker's 'instructions' evidently calls for well made lime mortar, and not water lime or hydraulic cement, as his 'letter' makes it.

The following note, from THOS. OTTAWAY, Cuyahoga Falls, Ohio, we give for some good suggestions, though not very clearly expressed. With reference to the Hooker tanks, the writer also does not seem to understand that the claim is more in the sunk tanks, than in the article they are made of:

"I read the *Monthly* with great pleasure, and was much interested in Mr. Hooker's article, in the July number. I am sorry to see him trying to monopolize the use of water lime. It is a very useful article in a hothouse. We used it in England to a great extent; and I have been using it here more or less for 3 years. Can he stop me from building my brick tanks, or lining benches, to make them hold water?"

The following is my style of building tanks; also the best and cheapest mode of building tank pits in the end. First, I run one 4-inch pipe around the house, pass it under the walk into the boiler again. Tap it in on top for flow pipe, and tap it on the lower side for return [We do not clearly understand this sentence.—ED. G. M.].

I build my tanks in sections, so if one breaks I can run the house with the others, which I consider a great advantage in cold weather.

Secondly, I run my flow pipe through the water in the tanks, and over the ends,—the return pipe passes back through the house, along side of the walk to the boiler.

These two plans give heat enough for a pit 10 or 12 feet wide, to grow tender plants in winter; and by building tanks on my plan, I always have a constant circulation of air if my house is shut up, which you do not have if you dump your tanks on the ground, as represented by Mr. Hooker.

Thirdly, In my plan of building tanks with brick or tile, with cement, I cover with slate, or whatever I can get, and seal them down with cement.

I am no professional gardener, but I am a dear lover of good plants.

If you refer to the "Cottage Gardener's Dictionary," (an English work), under the head 'Rendal Tanks,' there you will find Mr. Hooker's plan complete. He says the heating is not new. Very good. Nor yet is the cement tank; both are older than Mr. Hooker himself; but dumping it on the ground is new to me, and, in my opinion, spoils it."

NOTES ON GRAPES.

BY A. HUIDEKOPER, MEADVILLE, PA.

The open winter, with a few days of severe weather in January and February, entirely destroyed the Peach blossoms in Western Pennsylvania, and somewhat affected the trees; but they have made a reasonable growth of new wood—those trees doing best which were shortened in early in the season. Strawberries suffered as badly, the vines, where not covered, being drawn out of root. The crop was good in some localities, but in general was a moderate one. Pears and apples will yield a light crop—much of the latter fruit dropping, owing to the long continued drouth. Grape vines, where not protected, also suffered by the winter; but those who took the trouble to lay their vines down, are reaping the reward of their care, in a satisfactory crop of fruit. On my own grounds, the Delaware, Diana, York, Concord, Hartford Prolific, Clinton, and Burton's Early, all are heavily laden with fruit, and so far, entirely free from disease.

Under glass, the vines were uncovered on the 7th of April. and have been grown entirely without fire heat. The utmost limit in the way of ventilation has been given to them: top and side windows being kept open since the termination of our June frosts, both day and night. The thermometer has ranged from 45° by night to 95° by day; and the fruit is looking fresh and healthy, and the vines growing vigorously—the new wood is already beginning to ripen, and the fruit appears to be as far advanced as it usually is under greater heat and confinement.

Muscat of Alexandria has fertilized this season quite as well as the Bowood Muscat, and has done it under abundance of ventilation, which is contrary to the treatment prescribed in the books.

A vine of the Child's Grape, I noticed, blossomed differently from any of the others: instead of forcing off a cap, the petals opened like a flower; after

a few days these dropped off, when the stamens became elongated, and the vine came into bloom. If this be a fixed habit of the plant, it will be an easy way to identify it. Though this grape is an early one, the berries being a good size and the first to become transparent in the vinery, I feel disposed to reject it,—the clusters being irregular and not so well formed as many other varieties of equal merit.

In April I planted some seeds of the Delaware grape in a tub, in leaf mould obtained from the woods. I consider this the safest way to have genuine plants—earth from the premises of any one who has been cultivating vines for years, may very readily contain seeds of other varieties, and mistakes as to the origin of a plant innocently occur.

From the above planting, I have some three dozen vines, from six inches to three feet high, and, so far as is perceptible, there has been no departure in the foliage of any of them from that of the parent plant. I mention this, as a different experience has been given by others.

The foliage of the Clinton grape so closely resembles that of the York grape, (lately disseminated as the Franklin Grape), that it is probably a seedling of that variety. It resembles it in hardihood, habit of growth, etc., but is inferior to it in the size and eating qualities of its fruit.

When the season of maturity arrives, I will send you some further notes if desirable. [Please do.—Ed.]

ECONOMIC HEATING.

BY BARTHOLOM BOHMER, CLEVELAND, O.

Having read in your June number the article on "Economic Heating," I take the liberty to make a few suggestions about it.

I am erecting a greenhouse at present myself, and as fuel is very high, I like to make my heating as economical as possible, and intend to do it in the following way:—Around my furnace I intend to make a 4-inch arch, so as to leave a space between the arch and furnace, forming a hot air chamber; making an air flue on the lower part of it, which opens outside. From the hot air chamber I make a flue which opens into the main flue; by this contrivance I think I gain two ends: first, I convert more cold air into hot air, and get more draft in the flue. In addition to this, I shall put some 4-inch iron pipes through the furnace, which opens outside. The fire will heat the pipes, the cold air will rush in and come out heated on the other side. I can attach some tin pipes to it, and can lead the heated air where I wish. Should the heat-

ed air be too dry, I think there might easily a contrivance be made so as to attach water to it and raise some vapor.

My intention is with the same fire to convert the most cold air possible into hot air, and if this is done as I suggest, I have gained my point. At the same time I can always see my flue, and if there is any defect easily repair it, which I think is rather difficult to do the other way.

I should also like to know what is the best mortar to build a flue with?

[The system of heating, called in English works the 'Polmaise,' is nearly like this of our correspondent's. The objection to it was that the gas was liable to escape from the furnace to the air flues, and so injure the plants. Connecting the air flues, however, with the smoke flues, would not be so risky, and would, we think, be an advantage. There is always too much hot air about a furnace, and the plan proposed would certainly better distribute it.

If the furnace be tightly built, an air flue opening outside the furnace, carried over it, and connected with such a chamber, and led on an incline to the other end of the house,—there opening into the house, would probably carry to the cool end much of the surplus furnace heat.

The best flue mortar is made of lime slacked with *lime water*, and the bricks soaked in water immediately before using.—Ed.]

USES OF GRAPERIES IN WINTER.

BY WALTER ELDER, PHILADELPHIA.

Some of the glass structures whose foreign grape vines I winter prune, were erected for greenhouses.

They have strong back walls of stone mason work, and stone walls rising thirty inches above ground along the fronts and ends,—all the rest is glass,—with brick flues and stages inside. They were originally filled with choice collections of exotic plants; but through neglect of employing competent gardeners, many of the plants died, and grape vines were planted outside and trained inside, and now fill the houses. Generally they are thrifty and bear good crops annually. There are yet a numerous collection of exotic plants kept in the houses through the winter; and the past winter they got no artificial heat, and appear uninjured. And, although there are shutters for the ends, front windows and lower sashes on the roofs, they were not put on. One of these houses is thirty miles north of Philadelphia; one is twenty-four miles northwest; and a third is eighteen miles west

of Philadelphia, all standing upon high grounds, but slightly sheltered by deciduous and evergreen trees, as short distance off.

I took a list of the three collections of plants, in which were comprised the following, all of which appeared thrifty and good in order:—*Camellia japonica*, *Acacias*, *Azalea chinensis*, *Aloysia*, *Agave*, *Ardisia*, *Araucaria*, *Erica*, *Epacris*, *Eugenia*, *Fuchsia*, *Jasminum* (*grandiflorum* and *revolutum*), *Lagerstroemia*, *Laurestina*, *Laurus nobilis*, *Metrosideros*, *Magnolia* (*grandiflora* and *Exmouth*); *Nerium oleander*, *Orange Lemon*, *Pittosporum*, *Plumbago capensis*, *Punica* (*Pomegranate*), *Rhododendron* (*hybrid varieties arboreum*), and of the smaller plants, *Hydrangea*, *Carnation* and *Picotee* Pinks, *English Primrose*, *Daisy*, *Pansy*, *Polyanthus*, *Wallflower*, *Gilliflower*, *Neirombergia*, *Petunia*, *Verbena*, &c.

I was told that the thermometer at each place was thrice down to 17°, and twice at 14° in the mornings. What saved the plants, I think, was the great quantity of hoar frost upon the glass, which kept the sunshine out of the house through the day.

Now as those plants have stood the past winter without artificial heat, and without injury, they will need but little heat in other winters,—and that removes the great stumbling-block which deters many from having such choice exotics—the fear of the cost of fuel to save them in winter.

I was not much surprised at the result, for I had seen the *Camellia* growing out in the open garden all winter, both in England and Scotland. The plants in the houses were kept very dry, and only watered and syringed in mild weather, after cold spells. The dryness of the soil about their roots prevented the pots from bursting from frost.

Such, then, is an excellent use for which to employ a graperies in winter.

Many persons have collections of half-hardy evergreen trees and shrubs, and many of the newer kinds growing in pots, who keep them in the cold graperies in winter, in order to acclimatize them—they form a very pleasing winter garden, and afford pleasure the entire year to their possessor.

Another class make an orchard-house of their graperies, having many fruit trees in pots, which they set upon boards; in the spring they blossom and set their fruit, and are in full leaf before the grape-vines have leaves enough to shade them overmuch; they are then set out on the sheltered side of buildings or fences, and ripen their fruit two months earlier than the same kinds growing in open ground.

Those persons who are fond of flowers, will find their graperies a great promoter of earliness, as the early flowering bulbs can be made to bloom a month or six weeks earlier than if planted out of doors.

In localities where Boxwood edgings are apt to be winter-killed, or drawn out of the ground by freezing and thawing, if they are dug up in early winter, with all the earth that adheres to their roots, and placed closely together in graperies, they can be replanted in April. Tea Roses may be dug up and potted, and by keeping them partially dry during very cold weather, they keep well in the graperies, and in May set out-doors in sheltered spots until June, when they are turned out of the pots, and planted in beds or borders.

Those who like something to eat better than something to look at, can keep poultry, and get fresh eggs and tender chickens all winter. The late General Armstrong, of Redhook, N. Y., for a disease which he contracted during the wars, was ordered by his physicians to take a fresh egg dropped in a half a gill of good brandy every morning for his stomach, and a tender chicken stewed for dinner. To have these in winter, he had erected a glass-roofed house a hundred feet long, with three apartments for keeping hens laying and hatching in all winter; and it is said that his life was prolonged fifteen years by so doing. Hens wintered in graperies would lay and hatch all the time, and make the very best kind of manure for inside borders.

NOTES ON HARDY CONIFERÆ.

BY E. MANNING, HARRISBURG, O.

In looking over the July number of the *Monthly* I was much interested with the "Notes on Hardy Coniferæ," by Orchis, and feel inclined to give my experience, at this locality, as regards hardiness as far as tested.

All the commoner Pines have stood the winter well, but *Pinus Sabiniana*, which has stood out four years, growth very thrifty and beautiful, never injured till the past winter—killed outright. *P. Lambertiana* badly injured; may possibly recover. *P. Combra* entirely hardy. *P. cæcisa* (or which I received from a New York nursery under that name) out five years, entirely hardy.

Several others, such as *Nicea*, *Tyrenæa*, *Momdiensis*, *Mugho rotundata*—all very fine; untested.

Of the Fir tribe, *Picea Webbiana* killed; *pectinata* slightly injured; *pinusapo*, out five years, very beautiful and distinct, slightly injured and somewhat browned; *nobilis* is slightly injured; *Nordmanniana*, *Parsoniana*, *pichia*, *lesocarpa*, all under trial, and very beautiful and distinct.

Abies concolor, hardy; *archangelica*, very beautiful and distinct; *Morinda*, *Menziesii*, and *Douglasii*, all under trial. I agree with Orchis that *A. canadensis* is very fine, but *Parsoniana* is even much finer, somewhat darker, much more dense, with broader leaves, much more regular, of the same drooping habit—a superb tree. *A. canadensis microphylla* is quite distinct from either of the others, much more drooping, of a lighter green color, of shorter and finer leaves, of much longer branches, very graceful; has only to be seen to be admired.

Taxus elegantissima, *Dorastoni*, *chesnutensis*, and *hibernica*, are all beautiful varieties of the Yew; their hardiness is yet untested, being only planted out last spring.

Cupressus Lawsoniana and *ericoides* are both perfectly hardy; *elegans* and *McNabiana* are on trial; both very fine.

Thuja borealis, very fine, but untested.

Juniperus chinensis, hardy and very fine, holds its color well all winter; *glauca* is a very superb plant, and very distinct; has only to be seen to be admired; the finest Juniper I have ever seen—on trial.

Mahonia japonica, truly splendid, has stood 12° below zero without injury or the color the least changed—killed last winter to the ground, *aquifolia*, killed near to the ground; *ascicularis*, untested; *elegans*, very fine—untested.

Rhododendron roseum superbum, very fine, of rapid growth—on trial.

Olea ilicifolia, and *Nex laurifolia*, both very beautiful but untested.

Cephalotaxus Fortunei, very fine—untested.

Podocarpus andina, *taxifolia*, and *japonica*, all very fine—untested.

Retinospora variegata, and *ericoides*, both very beautiful—on trial.

Thuja dolabrata, and *variegata*, are on trial, plants small, very distinct, and superb if hardy—a great acquisition.

Torreya taxifolia, and *Myristicha*, both very fine especially the last—only on trial.

The following is also my experience with some of the more choice deciduous trees:

Magnolia macrophylla, killed to the ground; *conspicua*, slightly injured; *tripetala*, and *acuminata*, uninjured.

Salisburia adiantifolia, uninjured; *laciniata macrophylla*, killed to near the ground; *variegata*, untested.

Taxodium distichum, fatally injured.

Shepherdia, male and female, perfectly hardy.

Aesculus rubicunda, killed to the ground.

Glyptostrobus sinensis pendula, very slightly injured. A perfect gem of beauty, ought to be in every collection—the most distinct of all trees.

Betula laciniata pendula, perfectly hardy and very beautiful.

Stuartia pentagynia, uninjured very fine and distinct.

Clerodendron Kempferi, very beautiful uninjured.

Fraxinus acutifolia and *aurea pendula*, uninjured. The later a very graceful and beautiful tree.

Aralia spinosa angelica, killed.

Althea frutex, crimson-shaded, shaded, and double-purple—uninjured.

All the Remontant Roses, including sixteen varieties, all killed to near the ground, besides many other plants of less note.

PATENTS IN HORTICULTURE.

BY FOX MEADOW

Some individuals have spent months and years in study and labor, to work out some practical improvement to man's general benefit; and, as the majority of men cannot afford to give their time and labor to the world gratuitously, it is right that such should be paid for; and it is also right that inducements should be held out to new and good practical inventions. To all patents granted on the above grounds, we say, Amen.

To-day the horticultural world is called to a startling new invention, of the remarkably cheap TANK system for heating horticultural structures, by Mr. H. E. Hooker, of Rochester, N. Y.

A cheap hot-water apparatus is required by all who love horticulture, and when the news came of a new mode of forming a *cheap* and *reliable* hot-water apparatus,—why, Mr. Editor, our very heart leaped with joy! After joy came restlessness, and a desire to know what this cheap and efficient patent apparatus consisted of, and for what the Patent Office granted its diploma.

And here, let us ask this question, and let every reader of your journal ask, "What are the merits of Mr. Hooker's tank, that a patent should be granted, restricting the general progress of horticulture?" Did the Patent Office at Washington ever hear that warm water was made to circulate through any medium we please, simply through difference in its specific gravity? If they did not, then they had better call in William Saunders, who is so close at their elbows, and he will inform them. Does Mr. Hooker claim that he is the first man who ever made a common hydraulic cement tank

through which to circulate hot water? If he does, then he never could have been outside of Rochester! In, and for what, then, is this patent granted? Is it because the bottom of his tanks are made flat and the sides inclining? Perhaps it is because the tanks are sunk in the ground, for the earth to absorb its little heat; or that the sides are supported with strips of boards, to hold the cement till set; or that the top of this tank is covered with boards, and then plastered over with cement? The patent must certainly be granted for some one of these novel contrivances. If so, Mr. Editor, we certainly cannot see why the Patent Office should not grant either you or I a patent for the manner by which we part our hair!

To be serious in this matter, we say it is an insult to horticulture at the present day for Mr. Hooker to so deliberately set down and tell horticulturists how water can be made to circulate through a common cement tank; and further, it is imposing upon our commonest intelligence to tell us that cement will stand hot water without cracking. That "hot water has no more effect [on cement] than cold," is a grand mistake, for there are thousands of witnesses at the present day that know full well that there is *no hydraulic cement* that will stand hot water without cracking. The harder a cement will set, the more *liable and sure it is to crack and split*; and, owing to the fact that it cannot expand, like iron and many other metals when heat is applied to it. Heat applied to *stone* will split it to pieces, as is well known to the most of us.

The principal point, perhaps, to be considered in relation to this patent tank, is the radiating power of the material through which the hot water is made to pass; and, consequently its ability or inability to radiate a sufficiency of heat from a given surface, to maintain a required temperature under a glass surface, which is a very rapid medium through which zero condenses this radiated heat. Now as regards cement, if hot water be made to pass through it: the cement will become much hotter than would bricks with water circulating at the same temperature. This is proven by placing a thermometer on both materials; but if we should raise the thermometer twelve inches above the surface of these materials in question, we shall find the thermometer over the bricks at a much higher temperature than that indicated over the cement. The cause of this is that the brick is more porous than the cement, and consequently allows its heat to pass through it, or to be absorbed from it by a colder atmosphere. Again, it should be borne in mind, that when we come to case this ce-

ment with boards, we introduce almost a non-conductor of heat, and a shocking bad radiator. If it were possible, in this case of Mr. Hooker's tanks, to throw them through a current of hot air instead of hot water, it would be found a useless apparatus, even if the hot air was at a much higher temperature than the water. We introduce this remark to show the comparatively non-radiating power of *his* so-called apparatus; but owing to the amount of hot steam that these *board covers* of this tank absorb and becomes transmitted to the cement plastering of the surface, some portion of the heat is radiated in the atmosphere of the house. But this is nothing but a *secondary* heat, composed of air instead of steam, through being absorbed, and dried on a *second* surface, which is the cement.

A tank of this description *unquestionably* will retain heat for a long time, and we believe Mr. Hooker speaks truthfully when he says, that in their Propagating-house the water is made to circulate 300 feet before reaching the boiler, usually with a loss of its temperature of about 20°. This is the trouble: the heat is not thrown off quick enough. If there is only a reduction in the temperature of the water, after circulating 300 feet, of 20°, what proportion of that 20° gets to the atmosphere of the house, considering the bad absorbing and radiating material in which it is confined? This house Mr. Hooker speaks of is 75 feet long, and thoroughly heated with that portion of the 20° of reduced heat that can make its way through inch boards and cement plastering! Had he given some data, on which wishful horticulturists could build their hopes, other than common statements, we could then have analyzed the power of his heating apparatus somewhat better. Had he stated *how long* it took the water in question to travel that 300 feet,—the temperature of the water when first entering the tank, and its temperature at the return to the boiler, with the amount of heat radiated at 2 or 3 inches *above* the surface of the tank,—together with the number of gallons the tank and boiler held, and the number of square feet of condensing power the house contains, and which is brought to act against the radiating power of his PATENT APPARATUS.—the readers of the *Gardener's Monthly* could then have figured out the exact efficiency of this old *worn-threadbare* apparatus.

Walker, the celebrated Cucumber-grower of England, had some 18 years ago, to our knowledge, some two acres of ground covered with the common frame for cucumber growing. Two or three boilers stood in the centre of this ground and below the

level of these frames. The whole formed a square, and all the frames were heated by a hot-water tank, formed with clay, and through which the water circulated. These clay troughs were formed by first digging out the desired size in the hard ground below the level of the bed or compost in which the plants were to be grown, and then a good stiff clay was well worked (as in the case of brick making), and the excavations lined with it three inches thick. Common boards were laid over them, and their joints plastered with mortar. The tanks in some of these frames were made in the first instance by merely plastering Roman cement on the ground; but it was found that, for the purpose required, the clay answered a better purpose, as it did not crack, and only cost the labor of putting it in.

In the vicinity of the City of New York, and within the past eighteen months, there has been many a cement tank put up: but the experience to-day of those who use them is, that it would have been much cheaper to have used cast iron. We built one ourselves last fall, and used imported Portland cement, at it \$9 the barrel; and now stands split along the bottom: not merely the cement cracked, but bricks placed on the ground, and on which rests the cement, are cracked in two.

We think Mr. Hooker should have taken out a patent for his house building, as there are some points in it of timber saving worthy of note; and if he had introduced durable posts for the house to rest on (either locust or red cedar), it would not tumble down in two or three years after being built. Mr. Hooker will find it a difficult task to construct a tank of any material or form that has not been used years ago.

We say to your readers, that a tank well made of good pine, is good and cheap; and the next best thing is cast iron. We have already stretched our bounds, Mr. Editor, but we have some more to say at another time, and will close now by saying to your readers—LOOK BEFORE YOU LEAP.

[The above was received too late to be comprised in the article on this subject, and we cheerfully give it a prominent place. We withhold our own views for the present, as we wish to encourage as much discussion of the question as our correspondents feel disposed to give it.—Ed.]

WILD FLOWERS.

BY THOMAS GARDNER,

(Continued from page 237.)

The next family to be noticed is the composite. This has, by far, the largest list of flowering plants

of any in the Union, but they all have a great sameness. The Dandelion, Thistle, Aster, Golden Rod, or Sunflower, will give a good idea of the general character of this family. They are most common in the fall, and are usually yellow or white; occasionally blue, pink, or purple. There are very few of the beautiful varieties that are scarce, and as they are so showy and common as to attract general attention, we need not particularly point them out here.

In the order of Lobelias are several pretty varieties. The Cardinal Flower, *Lobelia cardinalis*), a scarlet flower, growing in swamps and blooming late in the fall, may be considered, perhaps, the most showy of our wild flowers. A blue one (*L. siphylitica*) grows with it and is also beautiful. Then there are a few smaller flowering kinds, and blooming earlier; *L. spicata*, for instance, that all will think pretty.

In Alpine countries the Bell flowers are numerous and showy. America has few of them. Two, *Campanula Americana* and *C. rotundifolia*, are the prettiest we have. These are confined to the northern States.

The Primrose family is also a family having numerous handsome representatives in some countries. But we have but one that it is worth while saying much about, and that is the American cowslip (*Dodecatheon meadia*). This is a native of the Western States, and is a beautiful plant indeed.

We have now come to another order of plants that is very extensive, and contains a greater variety and more distinct types of beauty than any other American order. This is the Figworts (*Scrophularias*). There are about thirty American genera, and in nearly every genus there are some handsome plants. To give an idea of what plants compose this order, the Snap Dragon may be named, the Mimulus or Monkey flower, the Foxglove, and the Mullein. The Mullein (*Verbascum*) has one very pretty species, the Moth Mullein or *V. Blattaria*. There are white, purple, and yellow varieties. Probably it is not truly indigenous, but originally introduced from Europe.

Another introduced plant, and very common, is the Yellow Toad-flax, (*Linaria vulgaris*), one of the prettiest, as well as one of the most troublesome weeds to the farmer,

The Turtle-head (*Chelone*) is a very pretty wild flower, growing along streams. One of them, with white flowers, shaped like the back of a tortoise, (*C. glabra*), is common in the Northern States, and the other with purple flowers, (*C. Lyonii*), is a southern plant.

The *Pentstemon*, or 'Bearded Tongue,' is another pretty tribe, extending from Canada to Brazil. The most common northern one is *P. pubescens*, a lilac and white flower, and very pretty. *P. dissectum*, with curiously cut leaves, grows in North Carolina. One of the prettiest is *P. grandiflorus*, growing principally west towards the Rocky mountains. *P. digitalis* is an Ohio plant, with an abundance of fine white flowers.

Of the 'Monkey-flowers,' a pretty blue species, growing on stems two feet high, grows in most wet places in the Union, flowering in the fall—this is *M. ringens*. The well-known Musk plant is a *Mimulus*, but comes from the Pacific coast.

The *Veronica* is a very pretty genus. There are some fourteen wild kinds, but mostly introduced from Europe. Three of the real Americans are worth knowing. *V. virginica*, a popular medical plant, known as 'Culver's Physic.' This has close spikes of bluish-white flowers, and grows up nearly two feet. It has not the usual 'Speedwell' look of the other *Veronicas*. *V. spicata*, the 'Blue-spiked Speedwell,' and *V. gentianoides*, the 'Gentian-leaved Speedwell,' are very pretty, low-growing kinds, with blue flowers.

We have no true Foxgloves indigenous, but *Gerardia* is a good substitute. Our people call these plants 'Yellow Foxglove.' Most of them are yellow. *G. flava*, *quercifolia*, and *pedicularia*, grow all over the Union; *G. pectinata*, and *integrifolia* are scarce. They have large yellow flowers. Another section of *Gerardia* are of low growth and mostly purple flowers. The *G. purpurea* covers whole fields in the fall with its pretty purple flowers. There are eight or ten others, nearly allied, and nearly as pretty, scattered over the Union.

The 'Painted Cup,' well known to children for its bright flowers, growing in wet swamps and flowering in June, is the *Castilleja coccinea*. We said flowers, but in reality it is the painted bracts or leaves surrounding the flower which are so prettily colored. One species, smaller than this, grows at the West; and another, prettier, but yet smaller, is a northern Alpine plant.

The 'Louseworts' (*Pedicularis*) are pretty. There are but two, *P. Canadensis* and *lanceolata*, common on most waste ground.

The *Labiata* or Lipped-flowered plants are as numerous as the Figworts, but do not present so great a variety in form and color. Blue is the prevailing tint. They are easily distinguished from Figworts, which they much resemble at times, by their having always four naked seeds in their seed vessels, while Figworts have many small seeds in

an enclosing capsule. The Sage, Lavender, Pennyroyal, and most of these square-stemmed, aromatic herbs will give a good idea of all the plants of this order.

The 'Blue Curls,' (*Trichostemma dichotoma*), growing about six inches high, abounds in most grain fields, blooming in August.

Ceranthra linearifolia, is a pretty southern plant.

Of *Salvias*, or Sages, *S. azurea*, blue, and *S. coccinea* are two handsome southern kinds, and *S. lyrata*, a blue one, is common North, and worth noticing.

The 'Mountain Mints,' or 'Bergamots,' (*Monarda*), are all pretty. *M. didyma*, with scarlet flowers, is a very fine variety.

The *Scutellaria*, or 'Skull Caps,' so called from a little cap-like covering falling over the naked seed after flowering, are all more or less handsome. There are also eleven wild species.

Macbridea pulchra is a pretty swamp plant of Georgia.

Synandra grandiflora is a beautiful plant of Ohio.

Physostegia Virginiana, or *dracoccephalum*, is one of the prettiest of wild flowers. The flowers stay where they are turned, as if hung on a swivel.

There are some handsome varieties among *Stachys*, but they are mostly coarse.

Among the 'Borageworts' are some genera of pretty flowering kinds. This family of plants is easily distinguished by its spikes of flowers being coiled backwards. The Heliotrope and Forget-me-not will give the idea.

Only one genus of American plants is handsome—*Mertensia*, or the 'Lungwort.' There are three species—*M. virginica*, *maritima*, and *paniculata*—growing mostly in the Northern States.

The family of 'Water Leafworts' (*Hydrophyllacea*), is altogether a pretty one.

The *Nemophila*, *Cosmanthus*, *Hydroclea*, and *Phacelia*, of our gardens, are all our 'wild flowers,' and the true *Hydrophyllums*—*H. virginicum*, *canadense*, and *macrophyllum*—deserve to be highly prized.

The *Phlox* family (*Polemoniaceae*) has been before alluded to. Besides the true *Phloxes*, the 'Greek Valerian' (*Polemonium reptans*), with blue flowers, is one of the prettiest spring ornaments of our stream banks.

The *Convolvulus* family is so well known as 'Morning Glory,' that nothing more need be said than that those seeking pretty wild flowers will be sure not to overlook them.

(To be continued.)

The Gardener's Monthly.

PHILADELPHIA, SEPTEMBER, 1864.

✉ All Communications for the Editor should be addressed. "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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HORTICULTURE JUST NOW.

On several occasions, since the outbreak of the rebellion, we have referred to the singular strength of the passion for gardening which our people have shown through all the sad troubles of the past. Horticultural exhibitions have been well supported—nurserymen and florists have done a fair average business—and Horticultural journals have kept well afloat on the sea of misfortunes over which they have had to sail—while Agricultural journals have many of them gone to the bottom, and others so weather beaten that they can scarcely hold together for a much longer cruise.

The fact is the love of gardening is deeper seated in the souls of our countrymen than would at first appear. There are a few instances where fine places are kept up from mere love of show—where every vegetable that can be squeezed out of the kitchen, and every fruit that can be raised in the garden or orchard-house, is sent to market, to help pay the expenses of misplaced pride,—and there are others where the first fruits and vegetables and flowers are thought 'too dear to use,' and the longing eyes and 'watering mouths' of the dear children are kept waiting for windfalls, or the refuse that are too cheap for market, or would bring in little towards the 'support of the establishment.' But these are rare instances, and more than balanced by frequent cases where the love of gardening has the genuine ring. To one who, in consequence of unforeseen misfortunes, recently failed in business, we remarked that his fine crop of early nectarines and grapes would at any rate bring him in a revenue, he replied—"I have raised them and watched them like children, and they were like children to me. My family and my friends have always shared them. I shall work for my creditors without recompense till their claims are fully paid,—if they want my fruits and flowers in addition, they can have them; but if they are left to me, they will give pleasure to my family and friends, or comfort

the sick and afflicted, as they have heretofore done. I have my own business to follow; I cannot make a business of them." Never to despair of the Republic might have been a virtue in the old Romans, with far less reason than we should have were we to despair of gardening amid such experiences as these.

Yet, deep seated as we know the love of gardening to be, we can scarcely expect the yearly fall exhibitions to prove as successful as they have heretofore been; but we have no doubt that the strongest efforts will be made to render them as interesting as possible. Our lines have been thinned by the war and by misfortune, but the veteran horticulturists will close up the scattered ranks, and make another charge for the grand flag of gardening as heroically as they have done in the glorious campaigns past. We shall not forget them when the day of trial comes. Easton, Cleveland, and other prominent points of attack will find us ready for the latest reports from the seat of war; and in the grand seige of Rochester, we expect to be on hand to chronicle the victories of Field Marshall Wilder, and of the numerous officers and privates under his splendid command.

And let them not forget us,—we of the *Gardener's Monthly*. Our position has been strongly and fearfully undermined by the enemy; but we have countermined and stand our ground. In the shape of high prices, the enemy has attacked us in front, flank and rear—but has been uniformly repulsed. We have had occasional reinforcements of new subscribers, and, on one or two occasions, had more taxes paid us in the shape of a slight raise in subscription price. We happen to know,—for we have several 'little birds' that keep our Secretary of the Treasury well posted on the feelings of our people,—that if our 'taxes' were to amount to ten dollars a head per annum, the burden would on the whole be cheerfully borne for the love they bear to their dear old *Monthly*. But the peculiarity of our army is that each private furnishes most of his own pay and rations, so that the expenses of our government is easily borne by numbers alone. All we want, then, is 'reinforcements.' We shall make no draft, as *substitutes* do not answer our purpose. It must be done entirely by volunteering, and by willing recruits.

Will not our friends, at the coming fairs and festivals do their best to help us in making our paper known? We are not as particular as some other governors. They accept men only in regiments, or companies at best,—we take subscribers in the smallest squads, and whole brigades would of course

please us immensely, and we are highly pleased by even a solitary addition to our subscription roll.

COLD GRAPERIES.

We were recently emphatically reminded, by a splendid show of lovely grapes in the vinery of Mr. Jefferis, an amateur at West Chester, Pa., how great the reward in pleasure and profit, is a small grapery to those who have them.

Here was a house 100 feet long by about 18 feet wide, built strong but roughly, of rough posts with a single course of rough boarding. There appeared no attempt to level the ground, but the natural grade had been taken, the natural soil apparently well subsoiled and enriched, and thus both house and border effectually made. The vines appeared to be five years old, and we counted the number of grapes on a single average cane, and multiplied by the number of canes, giving as a result 900 bunches of very fine grapes, just beginning to change color. We had not the pleasure of seeing the proprietor, but were told by a friend that the original cost was about \$250, and the daily attendance, what Dr. Thomas would say, little more than "the time most people spend in smoking their after dinner cigar." We have seen much better managed grapes than these, and much better crops under the hands of a professional grape-grower; but refer to this one instance as a fair average of what any many can do, and as a living text for what we have now to say.

Abercrombie—the great Horticultural writer of the past age—thought every man might be his own gardener; but at least he might be his own grape-grower. In some of the branches of gardening, very great skill is required to get more than the shadow of success,—but in grape-growing,—thanks to the exertions of first-class gardeners, whose communications have so often enriched the pages of the *Gardener's Monthly*,—grape growing under glass has been so simplified, as to become one of the easiest departments of gardening. He that runs may read its lessons,—and a very little judgment and experience make him an adept.

A new beginner in grape growing must, however, 'keep cool:' as in all divisions of the sons of men the newest converts are the most unreasonable zealots,—he will find among grape-growers those who give him the most trouble are they who have had the least experience. In one of our last year's volumes, our correspondent 'Phineas Chewee'—vinous juice, we presume, changed to vinegar—happily hits off this peculiarity of the neophyte,

by supposing him to recommend not only planting a cat at the roots of the grapes he would have muskeat; but it must also be planted with its "tail to the north pole." The house must be of such a shape, such a size, such an angle, and such an aspect. None other will do at all. The plants must be set so, trained so, pinched so, and pruned so,—and so and so must be the hourly attention, daily practice, and yearly rule. The crop of your cold vinery will give you the 'cold shoulder,' unless you heat it; and it will put on airs, unless you air it every day. So the story goes.

"The first thing hi does when hi goes hinto my vinery hof ha hevening," once said a good gardener to us, "hi pulls hof my hair." But "I should pull off my hair if I did," replies an equally good one; "I lower my sash, or open my ventilators in April, and let the air stay on all the year."

It is the fault of novices that they cannot distinguish between essentials and non-essentials. All these minute matters are well enough if you want superior grapes; but *good* grapes and plenty of them can be had easily and cheap,—and no matter how small a garden lot may be, one of the first improvements, after laying out the garden proper we should recommend to be a cold grapery.

Scraps and Queries.

✂ Communications for this department must reach the Editor on or before the 10th of the month.

✂ The Editor cannot answer letters for this department privately.

STRAWBERRIES IN ENGLAND—"An English Gardener," Brooklyn, N. Y.—In recent number of the *New York Tribune*, I find the following remarks on English strawberries:

"We sometimes hear people extol the strawberries of England and other parts of Europe, but such persons are only superficial observers—by high culture, and removing most of the fruit, the English get a few very large beautiful berries, at great cost. Very few tables in England are supplied with other than the wild berries. More strawberries are sold in New York in one day of the strawberry season than treble the whole season's supply of London.

The chief cause of the scarcity of strawberries in England lies in the fact that the English people ignore the sexual character of this plant, and thinking to improve on nature, studiously eradicate all the staminate or male vines, so needful to the fruc-

tification of many sorts. For sixty years they have thus been warring against nature. It is also a noteworthy fact, that all the large sorts now growing in Europe are seedlings of American varieties."

Now, I lived as gardener in some of the best establishments in England and Scotland 28 years, and never heard of these "few large berries at great cost," or "tables supplied with wild berries," or "male vines" being an "improvement on nature." I have been but 4 years in the United States, and do not see much difference in these things between this country and my own, but I thought probably you might be able to throw some light on the subject, so have taken the liberty of calling your attention to the extract.

[If our "English Gardener" had lived more than "4 years" in this country, he would have "heard enough" about this matter to last him for a life time. The late Mr. Longworth started a theory that pistillates were naturally more productive than hermaphrodites, by having a few staminate to fertilize. The English climate does not favor the abundant production of pistillates from seed as this climate does, hence Englishmen had no opportunity to test Longworth's theory, and are well known disbelievers in any thing however reasonable that does not originate, or can be tested at least, by themselves. Hence they were roundly abused by a certain class among us for their "narrow minded obstinacy," which is kept up to this day, in spite of the fact that the introduction of Albany, Downer, and other productive hermaphrodites has entirely exploded the pistillate doctrine of peculiar productiveness,—so much so, that few will touch a pistillate now "any more than the English."

We do raise considerably more strawberries than Europeans, as we do of most other fruits,—not because they are less expensive to raise, but because the more equal distribution of wealth here makes more buyers; and because our people are more generally a fruit eating people, and are yearly becoming still more so. The English are a meat loving race; from roast beef down to 'fat pork;' and fruits are taken 'by way of dessert,' like an after dinner cigar,—with us they form no mean part of the meal in most instances.

SPIRÆA AUREA—BLACK SPRUCE—W. A. G., Rochester, N. Y.—Will you please inform me through your *Monthly*, where *Spiræa aurea* first originated; and if there is any difference between the Red, White and Black Spruce? If there is any, how can they be distinguished?

[*Spiræa aurea* is a variety with lemon-yellow

leaves, obtained in Germany from seed of the American *Spiræa opulifolia*.

There is no specific difference between the Red and Black Spruce. The Red (*Abies rubra*) was so named by Lambert, from some unusually large cones of the *A. nigra*, or Black Spruce, that had been sent from America to Europe.

The White Spruce (*Abies alba*) is a very distinct species from the Black. It is distinguished from the latter botanically by its long cylindric cones, while those of the Black are shorter and broader. Popularly, it is readily distinguished from the Black by the bluish-gray color of the leaves, while the Black is of a reddish-green.

In this latitude, the White is a very desirable and much valued ornamental evergreen; but the Black is like the Balsam Fir, in ill favor.]

INSECTS—G. C. B., Mount Holly, N. J.—There were no caterpillars on your vine leaves. They had 'dried up,' and left only minute dots for skins. Any kind of small caterpillar will produce the effect on grape leaves, as those sent; and we judge it is a kind not peculiar to the grape vine, but one of those that eat the first kind of leaf they come to, as another larger species does apple, pear, etc.

We have no doubt that watching for their first appearance, and picking them off before they do much injury, will not be a very hard way to keep them down. They are mere raiders,—a sample of living thing that only does much damage when 'let alone.'

WHITE GRAPES.—"Vitis" enquires: "I had a very small bunch on a young Maxatawny vine last year, which I obtained from a reliable source, and assume to be correct; but it was of a greenish-brown color. Have I got it correct? or is it correct to call it a *white* grape?"

[We suppose probably the vine is correct. As to calling it a white grape, strictly speaking there is no such thing, all of them being 'greenish.' The term is used to characterize absence of color, which *white* is defined to be. The 'brownish' tint referred to in the Maxatawny, is derived rather from the sun. There are plenty of fully ripe bunches that have no brown tinge.]

FLORISTS' CONTRIBUTIONS TO THE SANITARY FAIR.—By some oversight, the contributions of Mr. Robert Scott, the Florist, of Philadelphia, has been overlooked in every published report. This accident is unfortunate, as Mr. Scott did as much as many whose names are duly credited. He is

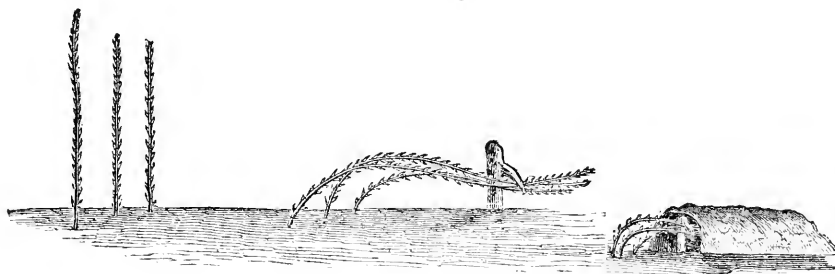
one of our most successful and respected business men among the rising race of Florists, and it gives us much pleasure, though at this late day, to do him justice.

RASPBERRIES—*M. R., Shelbyville, Ind.*—Please give in your next number directions for raising the finer varieties of raspberries. My Brinckle's Orange come up very thick, and form a great number of berries, but they are so small that they are worthless. The Antwerp varieties are very small, and almost worthless. Allen's Prolific, Hornet, Pilate, Franconia and others, seem to grow luxuriantly, but are winter-killed or too thick on the ground, or some fatality always attend them.

[From your description, we should judge the trouble with your raspberries to be that the canes

are partially injured by the winter. The wood is not entirely killed; some sap can flow through the canes, and they push into leaves and flowers; but the fruit will be small and inferior in flavor to vigorous plants.

Your best course will be to keep out suckers pretty well through summer, suffering only those to grow you want to save for next summer's bearing; this will give you strong well-ripened canes. Then, after the frost has destroyed the leaves, bend down the canes and cover with earth. This is expeditiously done by using a peg to keep down the canes, covering them with earth, then drawing out the peg, pegging down others over the last, and so on till the whole are done. The following cut, heretofore given in the *Monthly*, will explain:



When the canes are lifted in the spring, cut away about one-third of them. By this treatment we think you will be more successful than you have been.]

Books, Catalogues, &c.

ATLANTIC MONTHLY FOR JULY.—This number is of more than usual interest. "Wet-weather Work" has now reached the 7th chapter, and continues to give the history of Agricultural and Horticultural writers of the past century, in the pleasant gossip style for which the author of these papers is particularly distinguished. The present chapter gives sketches of Arthur Young; William Ellis, who thinks the "Practice of drinking Pippin Liquor and Cyder," conducive to very long lives; Robert Bakewell, the Sheep breeder; Cowper, the beloved of nature, but the miserable man; Gilbert White, author of the "Natural History of Selborne; Rev. John Truster, an Agricultural writer

of whom few of us have heard, and whose statistics the writer compares to the statistics of our Agricultural Department, which recently assured the country that, in the event of a certain tax being levied on Tobacco, "the grower would find, at the end of the year, *two hundred and ten per cent.* of his crops unsold;" Sir John Sinclair, the great Scotch land owner, and celebrated agriculturist; Richard Parkinson, author of "The Experienced Farmer," who, after emigrating to America, became disgusted with the 'poverty of the soil,' and returned to the land of Britain, rejoicing that he was back in a country where he "was not forced to rise and milk the cows in the morning, while the servants lied in bed;" Robert Brown, editor for fifteen years of the *Edinburg Farmer's Magazine*; Sir Uvedale Price, the well-known writer on the picturesque in Landscape Gardening, and the great opponent of Brown, principally, our author thinks, from a dislike to see a mere plebian become so popular,—Sir Price being a man of such narrow aristocratical tendencies, that democracy had be-

come quite a bugbear to him; Richard Knight—brother of the great Andrew, and a much smaller man in mental calibre, though a pretentious author; William Speechly, the patriarch of English grape growing; and slighter sketches of Burns, Bloomfield, and others.

But the peculiar interest of the present number is the "Glorying in the Goad," by, we believe, Donald G. Mitchell. This is directed especially to cultivators of the soil, and is a well written essay on the present condition of agriculture, in which the cultivator is cleverly illustrated, both as sinned against and sinning.

There is not a more generally admitted fact than that an intelligent farmer's son, usually disdains his father's pursuit, and rushes to other avocations to try his chances in life. You may tell him that ninety-five per cent. of those who go into commercial life fail, and point out to him that no farmer ever comes to want. You may also endeavor to excite his admiration of the charms of nature, and of the honorable position of agriculture in the history of a community. All this and all that has been said by agricultural writers, down to the author of this present tract, does not satisfy young human nature of an aspiring turn of mind. It yearns for difficulties to be overcome, and great prizes in the prospective. It will take its 5 per cent. chance of success in a great enterprize, rather than its 95 per cent. in one of a plodding competency. It sees in commerce its millionaires; but it never does in agriculture. On the contrary, it does see, as the author of "Glorying in the Goad" himself says, the great agriculturist, whose writings made you think there was a fortune in farming, supporting his family by writing for the *Country Gentleman*, at five dollars a page; or, perhaps, as in a very recent case the author of "Ten Acres Enough," buying a much larger farm, after finding ten acres too little.

We do not believe that this indifference to agricultural pursuits arises from the farmers being ignorant of their business. Chemistry, botany, geology, and physics generally, will undoubtedly assist them both to make farming profitable, and at the same time interesting; but the same is true, in a greater or less degree, of all other professions. We recently heard of an instance where a distinguished Philadelphia lawyer nearly lost the case of a client, through not knowing how celery grew. He thought it was planted out, and was cut yearly like Rhubarb,—that when you once set out a bed you always had it; cut it off, it grew again, and no further trouble. Farmers are no worse educated,

as a class, in *what they ought to know*, than any other one. In every profession ninety-five per cent. are, in this sense, ignoramuses; and the other five per cent. are not the ones who make fortunes.

It is not, in fact, the man who understands his business well who usually makes a fortune; but it is rather the one who knows how to judiciously employ capital.

It is our opinion that this is the great incubus on agriculture. Few have any more capital than their own labor, and those who have more waste it. The vast proportion of farmers and fruit-growers would be vastly better off with only half their present land,—or holding what they have, employ double their present amount of capital. The man who makes a fortune in commerce, does so by employing a large quantity of hands. Directly he may not employ any: he may sit in his office, and sell on commission; but the goods he sells, take scores to manufacture, and his profits are a small percentage shaved off of each hand. There is no way to make large profits but in this concentration of labor through one channel, or by being in some way connected with the concentrating point.

Considering that the farmer employs but himself, and a few horses, with perhaps one or two other hands, in the shape of wheelwrights, blacksmiths, bagmakers, and so on, he makes about the same living as a well to do mechanic; and the best education will enable him to do little more.

It is not particularly the attractions of city life that draw our young agriculturists away from pastoral pursuits, for many of them travel far from civilization—shivering away their aged lives in distant western wilds, in preference to staying among all the urban pleasures we may suppose entice them from us. They follow ambition, and go in search of something to conquer and worth conquering.

That the farmer and fruit-grower live well considering the little capital they employ, is, to our mind a better argument than any appeal to the pleasure, importance, or honorable pursuits of agriculture,—and the pointing out to the young man how he can get capital, and employ it in the soil with speedy and good returns, will lead him to the land, we believe, more earnestly than the best written exhortations to get learning, to get knowledge, or to get understanding.

Two or three Girards, Astors, or Vanderbilts, among farmers, would do more for the cause, in a few years, than the best managed Bureau of Agriculture would do in a life time.

But we are losing sight of the *Atlantic*. Let us say, that no magazine that comes to our table better merits universal support.

New or Rare Plants.

ADA AURANTIACA.—This remarkable New Grenada orchid has flowered for the first time in England, in Mr. Bateman's collection at Knypersley, to which it was sent by M. Linden. The foliage is prettily mottled, and the general habit somewhat resembles that of *Warrea tricolor* (the old *Maxillaria Warreana* of 'Loddiges' Botanical Cabinet'), a variety of which was itself once most unexpectedly found by Mr. Purdie in the same parts of New Grenada from which the *Ada* comes. The flower-stems rise from among the young leaves, are a foot or more high, and bear at their extremity a closely arranged raceme of apricot-colored flowers, of which the sepals and petals somewhat resemble those of *Lælia cinnabarina*, but they do not expand, and therefore quite conceal in their embrace the minute lip. In spite of this drawback, the plant is decidedly ornamental, and will no doubt become much more so when it has gained strength enough to yield flowers in greater profusion. It is of easy cultivation, and was grown, Mr. Bateman informs us, during the summer in the *Odontoglossum* house at Knypersley, but on showing flower was removed to a warmer berth. At present the plant is exceedingly rare, but doubtless some of the many collectors now orchid-hunting in New Grenada will be able to send home a fresh supply.—*Chronicle*.

L' Illustration Horticole contains representations, with descriptions, of the following new and rare plants:

PHRYNIUM VAN-DEN-HECKEI (*Maranta Van-den-Heckeï*).—Ever since the taste of amateurs has been turned towards those plants which naturally possess beautiful marking upon their foliage, there has been a constant importation from tropical countries of beautiful novelties of this kind, admirably adapted for the ornamentation of the stove or greenhouse. Among the host of subjects introduced, having their leaves ornamented with markings of rich and varied colors, there are few more worthy the admiration of the horticulturist than those we now introduce to our readers. We are indebted for the introduction of this plant to the exertions of M. Baraquin, collector to the establishment of M. Verschaffelt, who discovered it in Brazil, and who is already favorably known in the botanical world by the numerous beautiful *Caladiums* he has introduced. It is an herbaceous plant, with radical leaves borne upon very long petioles, cylindrical at the upper part, and of a reddish-brown color. The

leaves are a metallic green upon the upper surface, disposed in bands of light and dark color; along the median vein, and round the leaf about a quarter of an inch from the edge, is a broad silvery white band of irregular outline. This has the effect of lighting up the whole leaf, and giving it an exceedingly cheerful appearance. The under surface of the leaf is reddish-brown.

TACSONIA VAN VOLXEMIL.—This remarkable and distinct species of *Tacsonia* came originally from the high regions of the province of Antioquia, in New Grenada, where the inhabitants cultivate it in their gardens under the name of *Courouba* (?). It was at Bogota, in the garden of the director of the Foundling Hospital, and it was observed by M. Van Volxem, by whose means it was introduced into Europe in 1858. It is entirely glabrous; the leaves are deeply and unequally tri-lobed, of a clear green, and finely reticulated with red on the lower surface; the middle lobe is longer than the lateral ones; the flowers are solitary, pendant, and carried upon long thin stalks, and the reader may judge for himself of the beauty of such a disposition. It has not yet been flowered in Europe, but the figures taken from specimens sent from New Grenada show them to be very large and handsome.

CAMELLIA FANNY SANCHIOLI.—This charming white *Camellia* has been produced in Italy, from whence it has been received by the establishment of M. Verschaffelt. The flowers are of the purest white, slightly tinged with rose in the centre, while some pretty rose spots are visible here and there. The petals are large, round, bi-lobed at the summit, and are placed with the most perfect regularity. The plant is of excellent habit, the foliage ample and of a fine green, and the flowers are produced in abundance.

DENDROBIUM FYTCHIANUM (*Colonel Fytch's Dendrobium*), Bateman.—This charming *Dendrobium* was received last year by Messrs. Hugh Low & Co., from Moulmein, whence it was sent to them by their invaluable correspondent Mr. Parish. At the time of its discovery Mr. Parish was accompanied by Colonel Fytch, who observed the plant on the branches of an old tree overhanging the river up which they were proceeding; and as it is perfectly new to science, it may with much propriety bear the name of the gallant officer who was the first to notice it.

The flowers of *D. Fytchianum* are throughout of the most dazzling whiteness, except that the small lateral lobes of the lip are tinged with crimson. They are scentless and borne in graceful race-

mes a span long, proceeding from the extremity of the upright stems; and latter being about a foot long and of the thickness of a goose quill.

The slender linear leaves unfortunately fall off before the flowers, which are about an inch across, have had time to expand.—*Gard. Chronicle*.

The following New Plants have been received from Messrs. Fisher, Holmes & Co., Sheffield, which we think of sufficient merit to deserve especial notice:

The first is an *Abies* of such singularly dwarf habit that it might almost be compared with a Heath; leaves very dark green, with a white streak beneath, rough at the edge, and no bigger than those of *Menziesii polifolia*. It is no doubt some sort of *Abies canadensis*, and may possibly be included in some catalogues under the name of *Abies canadensis nana*, but the leaves are much smaller than in the plants which we have seen bearing that name. We propose to call it

ABIES CANADENSIS MICROPHYLLA. — Messrs. Fisher & Co. raised it from seed imported from Canada, and they have found it much more hardy than *canadensis* itself, it not having suffered in the severe winter two years when so many Conifers were injured.

We have also received five very nice varieties of the common *Yew*, seedlings raised at Handsworth, viz.: 1. A variegated Irish specimen; 2. what they call there *pyramidalis variegata*; 3. a 'berry bearing' *variegata*; 4. a slender green variety; and 5. a very distinct sort with the habit of an *Epaeris*.

But far more important than any of the above, is a very hardy hybrid *Berberis* between *Darwinii* and *empetrifolia*, which promises to be one of the best evergreen shrubs in cultivation. We call it

B. STELOPHYLLA.—The branches are hairy; the spines 3-parted; the leaves very dark green, about $\frac{1}{2}$ inch long, pale beneath, tipped with a short spine, and rolled backward at the edge, so as not to appear flat, but to look almost cylindrical. The flowers are of the same charming apricot color as that which renders *Darwinii* so ornamental, but they are smaller. We are informed that in the autumn the branches are "completely covered with berries of large size," and that the plant "will grow in any exposed situation without injury, and as it strikes readily from cuttings is likely to make capital cover for game." We shall be much mistaken if the variety does not become a universal favorite. Of course it cannot be allowed to bear

the barbarous name of *Handsworthensis*, under which it has been exhibited.—*Gard. Chronicle*.

New and Rare Fruits.

APPLE FROM WOODBURY, N. J.—I send you specimens of a seedling apple, discovered on a property lately purchased.

They are fair specimens as they were gathered, but not by any means the finest, as I had some that measured full 12 inches in circumference. Not being aware of the fact of their being a seedling, I took no pains to preserve them; and it was only when very few were left, that I learned the history of the tree.

The fruit, I think you will agree with me is of a rather remarkable character; ripening, as it does, in the latter part of July and first of August, of unusual size, and handsome appearance, and possessing qualities for cooking unsurpassed by any apple I ever saw, not excepting the Maiden Blush, which it precedes at least three weeks. Its pleasant taste, its crispness and melting character, make it especially desirable for culinary purposes. I should be glad to have your opinion on it.—JOHN STARR.

[This apple is very much like Summer Haglee. The stalk is not so thick; the calyx is smaller, and the basin broader and plaited, and the flavor is probably a little more acid. Whether, however, it is on the whole superior to that excellent variety, we could not say without a more careful comparison than we have now the opportunity of making.]

ROGERS' No. 19 GRAPE.—Our readers will remember that at the Great Exhibition of the Pennsylvania Horticultural Society, held in the Academy of Music, last Fall in Philadelphia, the premium for the best new grape was awarded Rogers' No. 19.

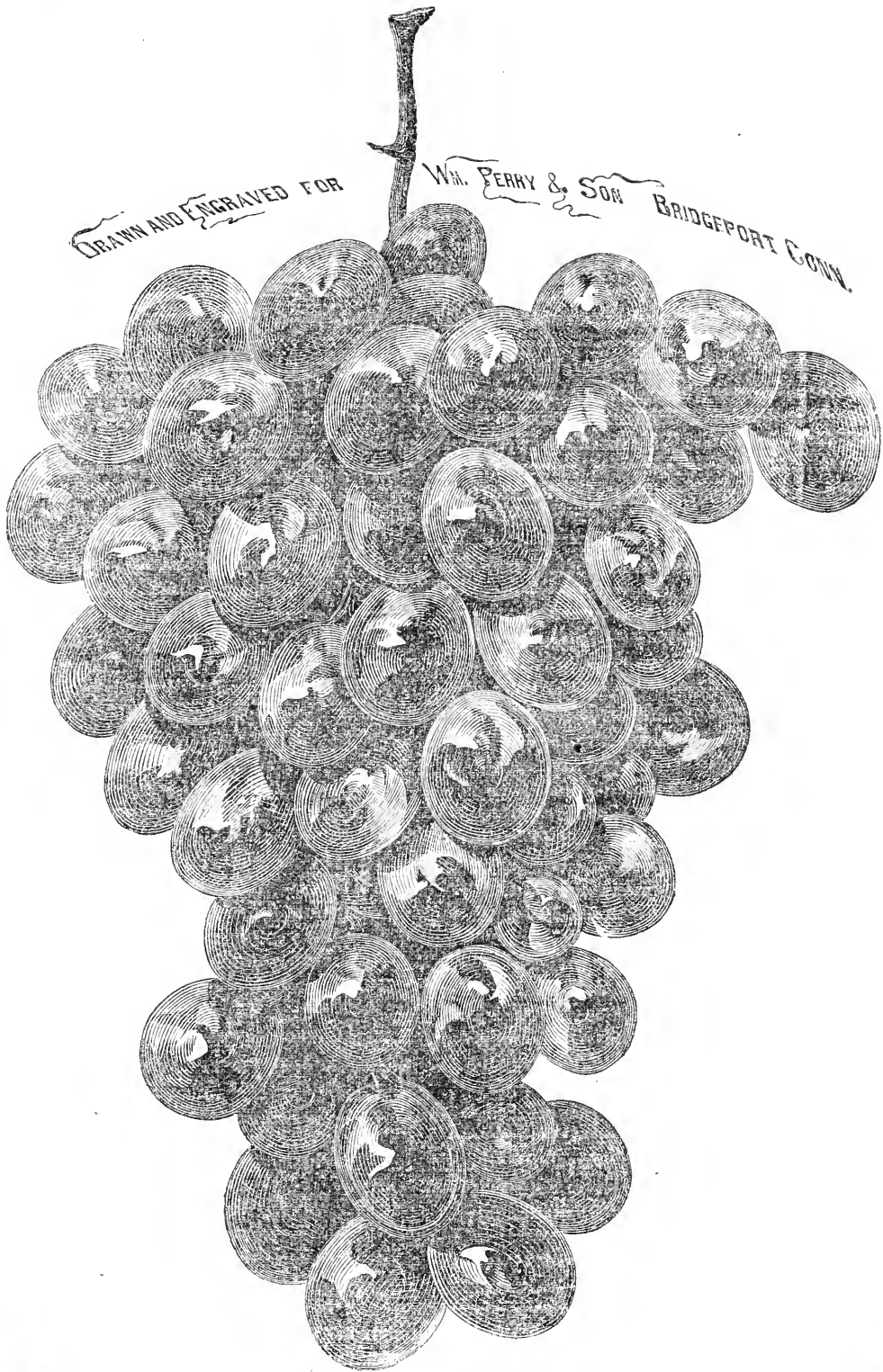
From one of the bunches exhibited, our good friend, J. S. Lippincott, Esq., of Haddonfield, N. J., made the drawing from which the present engraving was made, and we are enabled to say it is an exact likeness of this beautiful and superior variety.

It is to be regretted that Mr. Rogers did not name his grapes instead of numbering them, as we regard the chance of getting the kinds confused is greater by numbers than with names.

It is an advantage in such cases, however to have the particular attention of some one respectable firm directed more especially to one kind. Last

DRAWN AND ENGRAVED FOR

WM. PERRY & SON BRIDGEPORT CONN.



year we had occasion to refer to Messrs. Lindley & Hinks, as particularly engaged on one variety. By our advertising columns, we notice that Messrs. Perry & Son, of Bridgeport, Conn., have taken up this one, and have secured the stock of eyes from the original vine.

These gentlemen are well known from having done so much to make the Delaware and Concord popular,—and we have doubt No. 19 will lose none of its good character by going through their enterprising hands.

Domestic Intelligence.

A COUNTRY SEAT ON THE HUDSON.—One of the finest country seats in the United States is that of Mr. Winthrop Sargent, of Fishkill, in that beautiful mountain region, just where the Hudson enters the Highlands. Out of twenty-two acres Mr. Sargent has created a sort of terrestrial paradise, planted with all manner of pleasant trees both for fruit and ornament. It is most especially an arboretum of evergreens. Nearly all that will bear our climate, and many of those which require the shelter of the conservatory, are here brought together, representing every belt of latitude in the four quarters of the globe, whether north or south of the equator. Here are plantations of the Rhododendron, in its various beautiful varieties, with flowers of its various shades of color, equal in luxuriance to any in England, where that plant is a favorite, and where it flourishes with great vigor. Here many plants, which do not do well, bear the alternations of frost and sunshine which belong to our climate, lurk in the shade of tall cedars, and defy the severity of our winters. Among these is the Deodar Cedar and the European Holly, both of which are subject, when in situations exposed to the sun, to be nipped by the winter weather.

Mr. Sargent, in acclimating the evergreens of the Old World, has found that one of the hollies from that quarter, namely, the *Ilex laurifolia*, or Laurel-leaved Holly, a very beautiful species, with smooth, glossy foliage, endures our winter unhurt and undisfigured by extreme cold followed by warm sunshine. This is a valuable discovery.

One of the most remarkable characteristics of the place, however, is the art with which the grounds are laid out. Standing on the lawn, one might suppose that the estate was of almost boundless extent. By judicious planting he keeps out of sight the neighboring country seats, and only opens

vistas which lead the eye to grand objects and vast distances.

Through some of them you have broad views of the great Hudson, gleaming with sunshine, sails, and bright clouds. One gives you a view of the city of Newburg, seated on the declivities of the opposite shore. Looking in other directions you have a sight of extensive meadows and pastures reaching to the foot of the mountains which form the northern part of the Highlands. Other views show distant forests, in a landscape apparently unbroken by either fences or roads.

The lawn is kept shorn as smooth as an English bowling green by Swift's machine, which from time to time is passing over it, cutting off the short grass and leaving it on the ground as a top-dressing.—*N. Y. Evening Post.*

THE DELAWARE, the hardest of all varieties to propagate in the open air, we have succeeded in growing admirably, the single eyes, set horizontally in May, in a cold, clayey soil half an inch below the surface, and covered an inch above the soil with ———. We are not prepared to give full publicity to our process, till tried another season; suffice it to say, at present, that we can show 250 Delaware vines, thus propagated, growing finely, with good roots, in a row 30 feet long, and 8 inches wide.

This method of propagating grape vines from single eyes in the open air, appears to have been considered by horticulturists as impossible, as the *Gardener's Monthly* lately alluded to it as a discovery in France! We have propagated vines in this way for ten or more years. Where water is easy to procure, we should not cover the eyes over one inch deep with soil, when nothing is placed over that.—*Rural American.*

VOLATILE SOAP FOR REMOVING PAINT, GREASE SPOTS, ETC.—Four table-spoonfuls of Spirits of Hartshorn, four table-spoonfuls of Alcohol, and a table-spoonful of salt. Shake the whole well together in a bottle, and apply with a sponge or brush.—*Scientific American.*

GARDEN OF L. B. GAVIT, LYONS, N. Y.—An intelligent friend, to whom we are indebted for many favors, has furnished us the following:

"I recently spent a short time in Lyons, in Wayne Co., N. Y., and among other objects of interest, visited the well-kept grounds of L. B. Gavit of that place—a brief description of which will be interesting to your readers, as showing how much may be done by a person interested in the

cultivation of a garden, who is closely occupied during the day in an extensive business.

Mr. Gavit moved upon his present place about ten years ago, and nearly everything has been placed upon it since by him.

His grounds consist of about an acre, all in the highest state of cultivation—mostly occupied by trees, berries, shrubbery, and flowers. He cultivates about two hundred varieties of annuals, raised in a hot-bed and transplanted into the grounds, and which, in the early part of June were remarkably stocky and large. Indeed, in every thing he seems particularly 'lucky.' His roses, of which he has a very large quantity, are almost entirely free from slugs or aphids. He throws upon their foliage from a hydropult, a solution of whale oil soap and water. He finds the hydropult a very good arrangement for this purpose, as he can insert it under the foliage, and so effectually drive off the vermin with which they are infested. His currants and gooseberries are kept free from the worm, which is so destructive almost everywhere else, by the use of fresh slacked lime dusted upon their foliage.

Upon neat trellis and stakes, are nearly all the new and valuable grapes, most of them in fine bearing condition—all judiciously pruned.

I was much struck by the appearance of two specimens of English Ivy growing in front of his house, and winding around in a huge wreath tree the columns of his verandah, and coming together at the top in the form of an arbor. A remarkably fine Aristolochia or Dutchman's-pipe, shades a verandah extending across the end of his house, and is growing upon wires to the very top of the house. I have never seen so fine a specimen. This, with the Ivy, Prairie roses, grape vines, raspberries, etc., he always lays down and very slightly covers in the fall—so in spring they look fresh, and are sound their whole length.—*Country Gentleman.*

OUR PROPER NAME.—We receive letters and papers often addressed to all sorts of titles, which the Post-office, with uncommon good sense, supposes to be intended for us. It is not often that we get mistaken for the 'other brother' by our contemporaries; but it does sometimes happen, as the following shows, from the *Iowa Homestead*:

"The *Gardener's Chronicle* has hit upon a happy way of marking trees, by cutting the name in the bark. A decent scratch is sufficient to last."

We are not sensitive about every little scrap of credit being awarded to us; but, as our friend

aimed to do justice, we are doing but a friendly turn in aiding him to hit the mark.

GLORYING IN THE GOAD.—In our notice of the *Atlantic Monthly*, since electrotyped, we inadvertently supposed this chapter to be written by Donald K. Mitchell, and the "Wet-weather Work" by Gail Hamilton. Gail Hamilton was intended to be honored with imputation of writing the former, as it is well known that 'Wet-weather Work' is from the pen of Mr. Mitchell.

Foreign Intelligence.

A WEDDING BOUQUET.—In the papers that recently appeared in this journal on arranging flowers, there was a striking omission, and one the more inexcusable, because, in point of fact, the writer had seen and dissected some very first-rate specimens of a wedding bouquet. This postscript, then, comes to supply that grave neglect, and I hope no lady reader will be wicked enough to call it the most important part of these little hints.

As a general rule, in a bride's bouquet, as well as in the general arrangement of wedding flowers, white is certainly the color to predominate. It is, however, far more difficult to arrange white flowers well than to do those which give the help of color, and some of the difficulties are even difficult to describe; though, as I have myself made up a great many of these white designs, I will do my best to describe the principal things that are essential in them.

Every one knows that there are shades of white, we may call them three—the yellow, blue, and pink tinge; and there is, also, the perfectly snow white, which is of all the loveliest.

The grand thing is to get plenty of this snow white, and then to add whichever one of the other colors may be preferred. The pink tinge, if not more than that of a blush rose, is much the most effective; but it must not be allowed to be deeper than the rosy tint of a pale pink shell.

I do not think any other color is really good for bridal flowers. Other colors require a more forced shade; and even the beautiful blue quite alone with white, would look rather poor. The only way I think, at least, in which it comes in well, is as a fringe of blue encroaching here and there on the perfect white, and running all around it in little sprays of blue. I once saw a very pretty white bouquet thus edged round with blue. I am not

certain now what the flowers were, but they had exactly the effect of pale *Nemophilas*, or *Forget-me-not*; and I think the latter would be, at least, *ben trovato*. These blue flowers peeped out like little stars amidst a shower of the lightest Ferns.

The mention of the Ferns brings to mind one of the greatest objects in introducing color. Unless this is done the green itself is hard to keep sufficiently in the background. My readers will see at once that an ordinary bouquet deprived of its gayer flowers would be at once green and white, and this we have to guard against. At the same time, to have green is essential—no bouquet can do without it; and, I think, the way of best avoiding this serious objection, is to have flowers to which green belongs so naturally that they can scarcely be deprived of it. White *Clematis*, *Snowdrops*, *Bank-sian Roses*, *Flowering Myrtle*, strike me at once to mention as amongst this number; and even here I prefer naming the common flowers—unsurpassable, indeed, in loveliness, but such as all must know. All flowers almost, however, have some green of their own, which cannot be unconnected mentally from the flowers when they are seen together.

The white *Rose*, for instance, with the spray peeping up beside it; the white *Camellia*, with its large shiny leaf; the *Lily of the Valley*, with its snow bells lying in their cool sheath, if we want green—and we must have green—it must be brought in thus.

Perhaps this is one reason why it is often well to make up such bouquets piece by piece on the smallest and lightest sticks, adding to each flower its peculiar green, and then grouping them together, with filling up of *Clematis*, or of white *Heath*, or of something similar. White *Jasmine* is not among the most desirable, as the flowers drop so readily. A ground of *Lilies of the Valley* would, I think, look extremely lovely. White *Violets* would do tolerably, though a little too broken. White *Lilac* does very well; and double Chinese *Primroses* are only so far objectionable that they are a little stiff, and perhaps somewhat solid. I have seen white *Azaleas*, also, answer very beautifully. Perhaps *Camellias*, *Azaleas*, *Lilies*, and *Orange blossom* are of all the very best things to have; but it does not do to use *Azaleas* for the filling-up, or ground, unless they are smaller than the principal flowers used.

I will now proceed to give three or four separate designs, which may be done very shortly, taking for granted the explanations above.

1st. A perfectly white design. Centre *Camellia*, *Azaleas* gathered round it; but, yet put in lightly,

and without trying to force a quite level surface, which is nearly impossible, and quite undesirable. Five more *Camellias* at intervals, mixed again with a few of the largest *Azaleas* standing lightly. A few *Orange flowers* may be interspersed, and then *Lilies of the Valley*, or white *Heath*, or *Clematis*. If the former, a few leaves of their own may be used, but they should be of the youngest and palest kind, belonging to roots which have not flowered, and should only just show their heads between the *Lilies* and their frame or case. If *Clematis* or *Heath* is used, the *Orange flowers* and some *Lilies* may be mingled with it; but in these snow white groups a very little green tells quite sufficiently, and no separate foliage need be used at all. The small pale green fronds of the *Maiden-hair* could hardly, however, fail to add some grace and lightness whatever may be the centre.

In arranging all these flowers it is very essential not to cut off the leaves a little below the flower as far as they are good; they tend to keep the arrangement lighter, and also to obviate the appearance of unnaturalness in removing green.

2nd. White edged with blue. In this arrangement a little more green is to be admitted in the central part; it also, will bear somewhat heavier flowers, such as the *Double Primrose*; and *Bank-sian Roses* look very well in this case. They ought, however, to be mingled with larger flowers—*Roses* or *Camellias*. The half-opened *Gardenias* and the delightful thick-petalled *Stephanotis* are amongst the most charming flowers that can be employed, either in this or any other case.

The last line should be of small broken sprays mingling with blue. *Lobelia*, *Forget-me-not*, small *Campanula*, and prettiest almost of all, blue *Harebells*, may make this border, and break into a waving fringe of Fern. Where Fern is used the beautiful little *Harebells* seem to be quite at home, shaded by it and peeping out from among it.

For a blush bouquet, the smaller flowers should be quite white, and only a few half open *Roses* tinted; or the flowers should be white with a very delicate mixture of the palest pink-tinged *Rosebuds*. The *Multiflora Roses* are among the very best to use in this way, their long tapering buds having such a waxen look.

Many *Camellias* and *Azaleas* have the faint stripe or shade of rose I speak of. In these cases, of course, care must be taken to have a sufficiency of real snowy white, and so to arrange it as to make it harmonious.

In any case where flowering *Myrtle* is used, it should be continued, or at least repeated several

times. It is, however, rather too dark a green for a quite white bouquet, though, sometimes, the fresh shoots do well to mount other flowers upon.—E. A. M., in *Cottage Gardener*.

MUMMY WHEAT.—The *Presse Scientifique des Deux Mondes* contains a description of a series of experiments made in Egypt by Figari-Bey on the wheat found in the ancient sepulchres of that country. A long dispute occurred a few years ago, as to what truth their might be in the popular belief, according to which this ancient wheat will not only germinate after the lapse of three thousand years, but produce ears of extraordinary size and beauty. The question is undecided; but Figari-Bey's paper, addressed to the Egyptian Institute at Alexandria, contains some facts which appear much in favor of a negative solution. One kind of wheat which Figari-Bey employed for his experiments had been found in Upper Egypt, at the bottom of a tomb at Medinet-Abou, by M. Schnepf, Secretary to the Egyptian Institute. There were two varieties of it, both pertaining to those still cultivated in Egypt. The form of the grains had not changed; but their color, both without and within, had become reddish, as if they had been exposed to smoke. The specific weight was also the same, viz. : twenty-five grains to a gramme. On being ground they yield a good deal of flour, but are harder than common this time. Figari-Bey obtained similar negative results from grains of wheat found in other sepulchres, and also on barley proceeding from the same source; so that there is every reason to believe that the ears hitherto ostensibly obtained from mummy wheat proceed from grain accidentally contained in the mold into which the former was sown.—*S. Am.*

THE BEDDING AT KEW GARDENS.—The principal bedding display is on the main walk, on either side of which is a succession of circular and oblong beds well filled, and generally well contrasted, but the planting is of a less ambitious nature than at Sydenham, where perfection of the art is attempted, regardless of cost or trouble. Taking the beds on the main walk at Kew in regular order from the entrance, proceeding towards the old palm house, we have pairs of beds all through—that is, the circle or oblong on one side has its match on the other, so if we describe them as they are arranged on one side of the path, the description of each bed will be applicable to the counterpart bed on the other side. No. 1 is a circle of Brilliant, edged with variegated Alyssum, a very lively style of planting, and Brilliant is one mass of flowers; 2 is an oblong

of Purple King Verbena and *Calceolaria aurea floribunda*; 3 is a circle the same as 1; 4 an oblong, with Purple King Verbena along the centre, on each side of it *Tropæolum elegans*, and edging all round of *Cerastium tomentosum*; 5 is a circle of Alyssum, edged with blue Lobelia; 6 an oblong, with a solid coloring of scarlet and grey edging, the main block being Punch Geranium, and the edging *Stachys lanatum*; 7 is the same as 5; 8 is a large bed of Roses, the centre row half standards, the rest dwarfs, and mostly good hybrid perpetuals, such as Louise Peyronny. Mrs. Elliott, General Jacqueminot, Géant des Batailles, Madame Vidot, Caroline de Sansal, Duchess of Sutherland, Great Western, Souvenir de la Reine d'Angleterre, etc.; 9 a circle of *Tropæolum elegans*, and Purple King Verbena; 10 a fine long bed with three rows of *Ageratum* in the centre, next on each side two rows of Cerise unique, and edging of Flower of the Day; 11 the same as 9; 12 another fine long bed, with centre of *Calceolaria amplexicaulis*, next two rows of Perilla, edging of *Cineraria maritima*—this arrangement brings out the fine tone of Perilla to perfection, and makes a very effective combination; 13 is one of the best of the circles—the centre is variegated Alyssum, a glittering mass of silvery leaves and snowy flowers, round this *Gazania splendens*, planted thick, margin of blue Lobelia; 14 is an oblong of Lord Raglan Verbena (or one much like it), edged with *Cerastium*; 15 is the same as 13; 16 Roses only. Here we encounter the first cross walk, and as we turn either way, the planting is very pretty. The four corner beds, which we will call 17, are all in Punch and *Stachys lanata*, and the long beds which lead the way right and left, consist of Flower of the Day, Brilliant, and Purple King. Again, across the walk, to continue the line of the main promenade, we come to 18, Roses, as in 16, and to match; then 19, a circle, with centre of Alyssum, broad band of *Gazania* and margin of blue Lobelia; 20 an oblong, has Lord Raglan Verbena and *Cerastium* edging; 21 the same as 19; 22 is a fine oblong bed, the centre *Atriplex hortensis rubra*, Perilla, and *Cineraria maritima*; 23 a circle of *Tropæolum elegans* and Purple King Verbena; 24 *Ageratum*, Cerise unique, and the Flower of the Day; 25 as 23; 26 Roses; 27 Alyssum and Lobelia; 28 Punch and *Gnaphalium lanatum*; 29 Alyssum and Lobelia; 20 a fine long bed, with Purple King centre, broad line on each side of *Tropæolum elegans*, edging of *Cerastium*; 31 Brilliant, edged with variegated Alyssum; 32 *Calceolaria aurea floribunda*, edged with Purple King Verbena; 33 the same as 31.

Here terminates the grand promenade walk, and from this point there is on every hand a glorious prospect of water, grass, trees, glass, flowers—"all that can charm the eye and feed the mind that has a care for beauty."—*Gardener's Weekly Mag.*

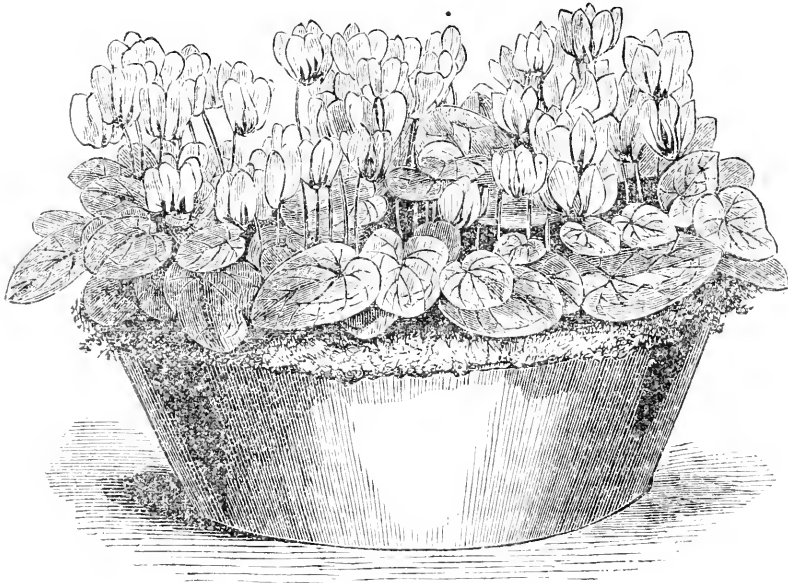
GROWTH OF TREES ON FRAZER RIVER.—However much there may be known about the large size of trees on our Pacific coast, the public does not tire of hearing more. Specimens of *Abies Douglassii* have been met with on that river measuring 12 feet in circumference at about 5 feet from the ground. One tree, found thrown down on the ground, measured 87 feet, and was not the tallest of the group.

Next in size are *Abies Menziesii* and *Mertensi-*

ana. They often rise 25 to 30 feet from the ground before branching out.

Next comes *Thuja gigantea*, followed by *Pinus contorta*, and by *Acer macrophyllum* and *circinatum*.—*Jour. of Linnean Society.*

CYCLAMEN CULTURE.—We recommend seedlings of *Cyclamen persicum* to be allowed to grow as long as they will without receiving any extra stimulant in the shape of more heat. Give them water so long as they continue to grow, keeping them on the shelf of your greenhouse; but when new leaves cease coming from the crown, the plants assuming a stand-still aspect, turn the pots on their sides to make sure of their not being watered. Keep in the full sun until all the leaves are off, when they



[CYCLAMEN ATKINSL.]

may be placed close together on a shelf in a cool part of the greenhouse. We do not advocate shaking them out of the soil and storing the bulbs in sand, certain as we are that it has tendency to weaken the bulbs. We should not be surprised if the seedlings continued to grow on through the winter until the beginning of May next year, when you must gradually withhold water and have the bulbs thoroughly ripe by the beginning of June, the pots then to be set aside in a cool place without water until the end of August.

At that time pot the plants singly, choosing pots about twice the diameter of the bulbs. Drain well; at least one-third of the pot should be filled with

broken pots or sifted ashes, covered with a thin layer of sphagnum moss or cocoa-nut fibre. Use a compost formed of equal parts of turfy sandy loam and leaf mould, with a sprinkling of silver sand.

The bottom of the bulb should do little more than rest on the soil, and not be buried beneath it; but the crown of the bulb ought to be level with the rim of the pot, its bottom just within the soil, which leaves room for watering. Water sparingly until the growth commences, and as it increases give more water. Place in a light and airy situation, for if kept in a close, damp, or dark place, they will never flower.

In after-seasons, when the plants die down, turn

them into the open border of the garden, allowing them to remain until the nights begin to be chilly, toward the end of September, when leaves very often are appearing and flowers rising. Pot forthwith, place on a shelf in the greenhouse, and you will have *Cyclamen persicum* in bloom all winter. Yours, however, may be the evergreen variety, by no means so rare as is represented, and if so, you will pot in August of each year, and have flowers all the year round; but if evergreen they need a rest, and that is done by giving less water from June until September.—*Cottage Gardener*.

SEAKALE, as grown here, makes a useful rotation crop. It is taken up in autumn and put away into any spare corner, covered with litter to keep frost from it. For forcing, a brick pit is filled with leaves about the first week in November; the roots are taken from their store, placed above the leaves, and covered with about 9 inches in depth of mould; fresh lots are introduced into the pits at intervals of about a fortnight all through the winter, and covered with short clean straw and wooden shutters. For new plantations, pieces of the roots cut into lengths of some 4 or 5 inches are buried among coal ashes; and the first week in April, when beginning to sprout, they are planted in well trenched ground, in rows 2 feet apart, and 18 inches asunder in the row. Spinach and Lettuces are planted as intermediate crops, and are off the ground before the Seakale wants the room they occupy.—*Gard. Chronicle*.

DEGENERACY OF FRUITS.—In a paper on the variability of the Pear, by M. Decaisne, given in the 'Annales des Sciences Naturelles,' the author maintains that there is no evidence of the degeneration of our fruit trees in consequence of the continual propagation by grafting. The facts stated by those who contend for degeneration may be explained in various ways—such as climates or soils unsuited for the particular wants of the varieties, bad culture, or improper grafting. Our ancient Pears, so justly esteemed for a century or two, are still the same as they were at first. The Crassane, St. Germain, Doyenné, Chaumontel, Bon Chrétien, etc., have lost none of their qualities. If they are neglected, it is only because cultivators are looking after novelties. M. Decaisne also maintains that it is not true that the seeds of good varieties of fruit, when sown in ordinary soil, have a tendency to go back to a wild state and produce crab fruit.

PODOPHYLLUM PELTATUM, or MAY APPLE, belongs to the natural order Ranunculaceæ. It

is only found in a wild state, in the States of North America, where it is widely spread, extending from New England to Georgia. The plant may be also commonly seen in the botanic gardens of this and some other countries of Europe. *Podophyllum* root or rhizome occurs in pieces of variable length, and from two to four lines thick, averaging about that of a common goose quill. At intervals, when not too much broken up, it presents large irregular, more or less flattened tuberosities, from the lower surface of which brownish-colored rootlets arise, or, when these are detached, their former position is marked by whitish, more or less projecting scars. The pieces are either nearly smooth or much wrinkled longitudinally, of a reddish-blackish or yellowish-brown color externally, and internally whitish or yellowish. They break with a short close fracture; have a sweetish and frequently somewhat narcotic odor, and a nauseous, slightly acrid, bitter, and feebly narcotic taste. *Podophyllum* has been frequently analyzed, and with somewhat conflicting results. The most important constituents, however, are two resinous principles, one of which, according to Lewis, is soluble in alcohol and insoluble in ether, and the other, constituting four-fifths of the whole, is soluble in both alcohol and ether. There is some difference of opinion in North America as to the relative purgative properties. The experiments of Mr. Harvey Allen led him to regard the resin, which was soluble in both alcohol and ether, as alone possessed of any active purgative properties. In the British Pharmacopœia the resin obtained from *Podophyllum* by means of rectified spirit, is officinal; hence, if the presence of two resinous principles be confirmed of different degrees of activity, our Pharmacopœia preparations will contain them both, as they are both soluble in alcohol. *Podophyllum* resin is described in the British Pharmacopœia to be "almost entirely soluble in pure ether," but we do not find the officinal resin as soluble as there stated. Besides these resinous principles, the alkaloid herberine, together with saponin and another alkaloid, have been recently discovered by Mayer in *Podophyllum*. In America, *Podophyllum* rhizome and its preparations, and more especially that of the resin under the name of *Podophyllin*, have long established their reputation as active and certain cathartics. *Podophyllin* has also been very extensively employed for some years in this country, and in other parts of the world, and is now, by almost universal testimony, regarded as a most valuable cathartic and cholagogue. In many cases it is applicable with perfect safety where mercury has been

hitherto indicated and alone used. The griping effects which are frequently experienced by its use may be readily prevented by combining it with small doses of extract of henbane. The dose of Podophyllum resin of the British Pharmacopœia is from a quarter to a half a grain, or even in some cases a grain. There can be no doubt but that Podophyllum is a very valuable addition to our British Pharmacopœia; indeed, we have no hesitation in stating that it is by far the most important new remedial agent introduced into that volume.—PROF. BENTLEY, in *Pharmaceutical Jour.*

EXHALATIONS OF PLANTS.—M. Cloez and M. Gratiolet found that the gas exhaled from aquatic plants, exposed to light in ordinary water, slightly impregnated with carbonic acid, contains besides oxygen, a notable quantity of nitrogen. M. Cloez also states that the colored parts of plants do not decompose carbonic acid.

BEDDING GERANIUMS.—Mr. Salter's houses are gay with most beautiful examples of Pelargoniums of the Nosegay section, one of the handsomest of the many groups into which this genus is divided. Among them the following are well worth attention, viz.: Improved Titian, rosy salmon; Woodwardii, similar in color, but perhaps a shade darker; Amelia Griseau and Mr. Lierval, white flushed with salmon, the one differing a little from the other in amount of color, but both handsome; Germania, clear salmon red; both French and English varieties of Merrimac, the first rosy crimson with a fine truss of bloom: the last equally good, but a little different in shade of color. In addition to these there are also Prince Christian, rosy pink; Flora, delicate peach; Comet, a vivid scarlet with a white eye; Lady Blanche, white; St. Fiacre, salmon; Helen Lindsay, rose and white, a fine kind for bedding purposes; Eugene Mezard, white, deeply flushed with salmon; Cybister, scarlet; Lord Palmerston, crimson; Spread Eagle, glowing orange scarlet, a dwarf neat sort; Mdle. Si-lonie, rosy lilac; Model, deep rose; Imperial Crimson; and Madame Pauline Gaspard, rose. These are all excellent varieties, worthy of being added to any collection, each head of showy blossoms being quite a bouquet in itself.—*G. Chronicle.*

THE BEAUTY OF NATURE.—Beauty is not an accident of things, it pertains to their essence; it pervades the wide range of creation; and, wherever it is impaired or banished, we have in this fact the proof of the moral disorder which disturbs

the world. Among all the devices of creation there is not one more wonderful than the profuseness with which the mighty Maker has been pleased to shed over the works of his hands an endless and boundless beauty.

And to this constitution of things outward, the constitution and mind of men, deranged although they be, still answer from within. Down to the humblest condition of life, down to the lowest and most backward grade of civilization, the nature of man craves, and seems as it were ever to cry aloud for something, some sign or token at least of what is beautiful, in some of the many spheres of mind or sense. This it is that makes the Spitalfields weaver, amidst the murky streets of London, train canaries and bullfinches to sing to him at his work; that fills with flower pots the windows of the poor; that prompts, in the humbler classes of women, a desire for some little personal ornament, certainly not without its dangers, (for what sort of indulgence can ever be without them?) yet sometimes, perhaps, too sternly repressed from the high and luxurious places of society. But indeed we trace the operation of this principle yet more conspicuously in a loftier region: in that instinct of natural and Christian piety, which taught the early masters of the Fine Arts to clothe, not only the most venerable characters associated with the objects and history of our Faith, but especially the idea of the sacred person of our Lord, in the noblest forms of beauty that their minds could conceive or their hands could execute.

It is, in short, difficult for human beings to harden themselves at all points against the impressions and the charms of beauty. Every form of life that can be called in any sense natural, will admit them. If we look for an exception, we shall perhaps come nearest to finding one in a quarter where it would not at first be expected. I know not whether there is any one among the many species of human aberration that renders a man so entirely callous, as the lust of gain in its extreme degrees. That passion, while it has full dominion, excludes every other; it shuts out even what might be called redeeming infirmities; it blinds men to the sense of Beauty, as much as to the perception of justice and right; cases might even be named of countries, where greediness for money holds the highest sway, and where unmitigated ugliness is the principal characteristic of industrial products. On the other hand I do not believe it is extravagant to say that the pursuit of the element of Beauty, in the business of production, will be found to act with a genial chastening and refining influence on the commercial

spirit; that up to a certain point it is in the nature of a preservative against some of the moral dangers that beset trading and manufacturing enterprise; and that we are justified in regarding it not merely as an economical benefit—not merely as that which contributes to our works an element of value, not merely as that which supplies a particular faculty of human nature with the proper food, but as a liberalizing and civilizing power, and an instrument in its own sphere of moral and social improvement. —*Gladstone.*

FERTILIZING POWER OF POLLEN.—M. Belhomme states that the pollen of monocotyledons preserves its properties for a much longer period of time than that of the dicotyledons. He experimented upon the following natural orders: Leguminosæ, Rosaceæ, Myrtaceæ, Umbelliferae, Cactæ, Cruciferae, Malvaceæ, Solanaceæ and Boraginaceæ of the latter group, and he found the pollen as fertile at the end of three years as it was at first. His experiments on Monocotyledons were made upon the Liliaceæ and Amaryllidaceæ, the pollen grains of which retained their fertility for a period of six years. Fertile and barren pollen may be readily distinguished. If the grains have lost their fecundating property, they feel like dry powder when placed upon the palm of the hand; if, however, they still possess it, they adhere to the hand, and seem as though they had been slightly moistened. —*Gard. Chronicle.*

NOVEMBER BLOOMING ROSES.—One great charm attached to the Rose, is the length of time in which it may be had in bloom in the open garden, without protection of any kind. I have this day (Nov. 18), gathered a bouquet of these charming flows sufficiently numerous to fill a large vase, and of a quality good enough to grace a drawing-room, or I might almost say, fit for setting up in an exhibition stand. Although we have lately experienced violent gales of wind and heavy storms, many of the blooms have not a damaged petal, while the glowing color of some varieties is exquisite. The few last warm days have contributed to this result.

It is my intention to give a short, but, I trust, a useful list of varieties which can be depended on for late autumn or winter blooming, and I shall place them in their order of merit, viz.:

General Jacquemont. This brilliant variety decidedly claims the foremost place; not only are blooms and buds on every plant, but the flowers not being so full as in many kinds, open much more

freely, and have all the high coloring we expect to find early on a summer's morning.

Louise Odier is another charming rose, the color soft pink, the form good.

Senateur Vaisse is an excellent late bloomer; the color deeper than in the summer, but the buds being fuller of petals do not expand so freely as the General.

Madame Charles Wood is another acquisition; the plants with me have more blooms and buds on than they can well support. Color deeper than earlier in the season; the blooms open freely.

Madame Knorr is a pleasing rose, being small and pretty, but the color rather waxy.

Madame Louise Carique is a variety which is very beautiful; the blooms open freely, and are distinct in color from any other rose, the petals being crimson and shaded with deep violet. This rose is by no means a favorite, either for exhibition or decorative purposes in the summer, but it is well worth growing, if only for its beauty in the fall.

Madame Clemence Joigneaux is a fine bold rose-colored variety, but too full to open freely unless the weather be dry.

Gloire de Dijon must not be forgotten, as its fine blooming qualities and its chaste color render it a decided acquisition; the winds and rains at this period of the year are apt to destroy its beauty.

La Reine is not so free as some others, yet here and there a grand bloom can be found.

Monsieur de Montigny is another of the *La Reine* class, but deeper in color and very showy.

Victor Verdier is a pleasing bright pink, and opens very freely if the weather is not wet.

Maria Portemer is a neat dark rose, and very free; the outer petals are apt to decay before the flower opens.

Noemi is very free, the flowers light pink, but small; it has the same fault as *Maria Portemer*.

La Fontaine is a showy rose; opens well, and keeps its color.

Triomphe des Beaux Arts is a free blooming kind, very dark, semi-double, but pretty, chiefly on account of its color.

Madame Schmidt is a fine chaste rose-colored flower, not very free, but distinct and beautiful.

Souvenir de la Reine d'Angleterre is another large showy rose, and opens well, color pale pink.

Duchesse d'Orleans produces occasionally fine blooms of a pale flesh color, which are exceedingly delicate at this season.

Souvenir de la Malmaison is also of a beautiful color, but the outer petals often decay before the blooms expand.

Blanche de Solverville is distinct from all others ; the blooms are small, of a creamy white ; opens well ; not very double.

Salet (Moss) is the only Moss that opens freely, and is therefore desirable, although of a poor color.

Bouquet de Flore is a pretty cupped rose, deep pink, small.

Jules Margottin is a free bloomer, of a pleasing color, but the wind appears to damage the blooms much, giving them a very ragged appearance.

It will be borne in mind that the colors here given are as produced now, and that the varieties enumerated are those that were in bloom on the 18th day of last November.

Many other kinds could be mentioned that are beautiful in the months of September and October, but which will not come into the list of November Roses.—*Gardeners' Chronicle*.

POISONING BY BUTTERCUPS.—An inquest was recently held at the Bull Hotel, Dartford, before Mr. C. J. Carttar, coroner, on the body of a child named Sarah Elizabeth Heron, aged six years. It appeared by the evidence of the mother and father of the child, that some time before the death, the deceased had complained of feeling very unwell, and in great pain about the body and legs. The mother afterwards discovered that the deceased had been eating Buttercups from a field close by, and sent for a powder from a chemist's ; but as the deceased vomited a great deal, and presented every appearance of having been poisoned, the parish surgeon was sent for, but that gentleman did not arrive at the house till the child was dead. A *post mortem* examination had been made, which proved the deceased had been poisoned by eating Buttercups ; and the jury returned a verdict to that effect.—*English Paper*.

ROSES AT THE LONDON HORTICULTURAL SOCIETY'S EXHIBITION.—New Roses were shown in plenty, and the competition was wisely extended to varieties of 1861 and 1862, so that there was opportunity afforded for bringing together all the best of the many novelties recently introduced, for comparison side by side among themselves, and with the best of the established varieties in other classes. We wrote down on the spot a description of each of the new roses as shown, and we shall give these descriptions as we made them. Messrs. Paul & Son, of Cheshunt, took first prize in this class, with the following :—*Pourpre d'Orleans*, velvety purple shading off to pucey crimson, cupped, full, medium size ; *Madame C. Wood*, purplish red, not very

different from the last, but larger, petals large and thick, the reverse of the petals whitish, a fine rose ; *Alphonse Damaizin*, in the way of Eugene Appert, lively scarlet crimson, a very striking rose, and first rate in character ; *Souvenir de Comte Cavour* (Moreau), there are two new roses of this name, and both were in this stand, this is like Colonel de Rougemont in form, and is rather coarse, with a bad centre, color lake shading to lilac rose—(Margottin), deep purplish crimson shading to nearly black, very full and large, and in many points like Lord Clyde, a good rose ; *Maurice Bernardin*, deep lake (not vermillion, as described in the catalogues), large, full, imbricated, a lovely rose, and indispensable ; *Beauty of Waltham*, rosy crimson, a shade paler than we have been accustomed to see it, perhaps owing to its having been too much shaded, nicely cupped, good substance, a first class rose ; *Alba rosea*, a poor creamy white Tea, with a tinge of rose in the centre, a seedling of *Devoniensis*, and as shown on this occasion worthless ; *Madame Clemence Joigneaux*, large, rich rose, fine ; *Richard Smith*, deep crimson shaded with violet, the same color as Margottin's *Souvenir de Comte Cavour*, but smaller, and otherwise not so good ; *Mareschal Valliant*, glowing crimson lake, small, full, very compact, and in every sense a lovely rose ; *Madame Helye*, lilac rose, cupped, medium size, fine ; *Triomphe de Carn*, centre scarlet-crimson, outside petals purplish crimson, small, neat, cupped, good ; *Jean Goujon*, clear red, exquisitely formed, —this flower was full out, and had as good a centre as any rose in cultivation ; *Le Rhone*, rich magenta crimson (not vermillion, as described in the catalogues), exquisitely formed, a brilliant variety for exhibition, and free enough for clumps and beds ; *Violetin*, deep purple, shading to black, medium size, better than *Reine des Violettes* ; *Professor Koch*, a light cupped globular flower, color rosy cerise, shaded with crimson ; *Olivier Delhomme*, purplish red, like Bourbon Souchet, charming foliage ; *Gloire de Chatillon*, not in any way, so far as we could judge, to be distinguished from Margottin's *Souvenir de Comte Cavour* ; *Robert Fortune*, lilac rose, loose, confused centre, sweet scent, quite second rate ; *President Lincoln*, a curious mixture of lake and lilac crimson, good to the very core, imbricated, outer petals reflexing, in the way of Lord Raglan, and equally desirable ; *Lord Clyde*, better than it has ever been shown before, though we always had to report well of it—let the rosarian imagine a General Jacqueminot made to order, and he will have an idea of the color and quality of Lord Clyde ; *Duchesse d'Alencon*, pure rose, im-

mense shell-like petals very large, a gem among roses, *Peter Lawson*, brilliant red, like *Triomphe de Caen*; *Prince Camille de Rohan*, deep maroon crimson, rich and velvety, superb; *Madame Caillet*, satiny rose, nicely cupped, medium size, not over full, second rate; *Etienne Lecrosnier*, amaranth shaded with slate, in the way of *Triomphe de Caen*, very small, but superb in form and substance, and very distinct; *Monte Christo*, brilliant purplish crimson dashed with scarlet, very large, and good centre; *Turenne*, bright lilac rose quartered, not very elegant; *Souvenir de M. Rousseau*, color a mixture of lake and lilac—the bloom in this stand looked as if its life had been shaken out of it; we have never yet seen this variety in such a state that we could heartily recommend it; *Francis Lovat*, light purplish crimson, shading to bluish red, cupped good; *Archeveque de Paris*, very rich and dark purple, with a gleam of lake on the purple ground, small but good; *Paul Feral*, bright lilac rose, large, full; *Louise Darsins*, pure white, medium size, good; *Wilhelm Pfützer*, brilliant red, large and full; *Gloire de Bordeaux*, silvery white, under side of petals rose color, large and full, and good substance—this is a seedling of *Gloire de Dijon*, and has a proper Tea character.—*Flor. Cub.*

AFRICAN FRUITS.—Of African edible fruits and seeds, one could almost go on to infinity, for there are few indigenous that are not eaten by the natives in some form or another. The Blood Plum of *Sierre Leone* (*Hematosiphis Barteri*), has a pleasant subacid flavor when ripe; in size and form it is similar to a grape, but somewhat larger. Another fruit of the same shape and form, but smaller, and with less pulp, is considered a favorite fruit on the Niger; it is a species of *Vitex*. The fruit of *Sarcocephalus esculentus*, called in *Sierre Leone* Native Peach, is when full grown, about the size of a large apple; it is of a pulpy nature; the outside is rough and uneven, and bears some resemblance to a Custard Apple (*Anona*). The pulp of the Baobab (*Adansonia digitata*), has a very pleasant and agreeable subacid flavor, and is much esteemed by the natives in making a kind of sherbet or cooling drink. *Detarium senegalense*, called *Duttock* on the Gambia, where it grows to an immense tree, produces a fruit, the pulp of which is eaten, as well as the kernel or seed. In size and shape it is like a large Chestnut; the outer skin is of a dark dull brown. The small pod of *Codarium acutifolium* is remarkable for its velvet appearance; hence it is sometimes called Velvet Tamarind, and is also known as Black Tamarinds. The pulp enveloping

the seed has quite the flavor of East Indian Tamarinds, and is valued by the natives of *Sierre Leone* on that account. The Ochro (*Abelmoschus esculentus*), is common on the Niger, and is used on account of its mucilaginous properties in various ways in the preparation of native dishes. The seeds of a species of *Triculia* are also eaten in this part of Africa; the fruit is very similar to the Bread-fruit, to which it is closely allied. Its size is about that of a child's head; the seeds are small and hard; the native name is Akna. The fruits of *Habzelia aethiopica* are used as pepper, and are sold in the markets at Nupé as well as at Bahia. The seeds of *Monodora grandiflora*, *tenuifolia*, and *brevipes*, are all more or less aromatic, and would seem to be well adapted, if shipped in any quantity, for a useful condiment in this country. Many of the *Anonaceæ* have the same decided fragrance, but none so powerful as in this genus. The fruits are very large and round; those of *M. grandiflora* quite the size of a large cannon ball, the other species somewhat smaller. The seeds are about the size of a common Scarlet Runner Bean, and are very thickly embedded in the pulp, which fills up the interior of the fruit. The fruits of the Wild Mango, probably a species of *Spondias*, are eaten on the Niger, and on the Zambesi the kernels of a species of *Sclerocarya*. The stones of this fruit, however, are very hard and difficult to crack; these kernels appear to contain a quantity of oil, and perhaps might be turned to account in that way. The fruit of *Malpighia saccharina*, called in *Sierre Leone* the Sugar Plum, in shape and size resembles the Damsion. It has a sweet and agreeable flavor, and is in perfection in the months of February and March, when it is to be seen in large quantities in the market of Freetown. The tree producing it is lofty and majestic in appearance, attaining a height of 80 feet. The large seeds of *Pentaclethra macrophylla*, known in the Eboe country as *Opachalo*, and in Gaboon as *Owala*, are collected at the seasons of their falling, and eaten as food; they also yield a clear limpid oil. The young germinating shoots of *Borassus aethiopum* are eaten by the natives both of East and West Africa; for this purpose they are taken up soon after the seed has vegetated, and are then boiled in a similar manner as we cook Cabbages or some such vegetable. The large seeds of *Cycas circinalis*, from which the natives of Ceylon and Western India prepare a kind of Sago, are valued as an article of food in some parts of the Zambesi. The existence of a species of *Cycas* was discovered in Western Africa by the botanist of the Second Niger Expedition, as well as

by Gustav Mann, both of whom found that the natives applied the seeds as an article of food. Of the Dika or Udika bread, a specimen of which arrived in this country some three or four years since, and was then supposed to be procured from the seeds of *Mangifera gaboniensis*, it will be sufficient to say that upon further researches it is proved to be from, no Mango, but from the seeds of *Iringia Barteri*. The fruit is similar in form and size to that of the Mango, but the seeds, which contain a large amount of oil, are separated from the fruits and beaten in a trough till they attain a partially fluid state. This is then put into baskets of Musa leaves, and exposed to the sun, when a white tallow collects on the surface, which is poured off, and the Dika allowed to cool in the shade. The natives esteem it very highly in the various preparations of their food, but more especially in cooking fish. It has, however, a strong, rank, and highly disagreeable taste. The fruit of a species of *Parinari*, known on the Zambesi as Mobola, is valued on account of the very sweet pulp which surrounds the seeds. The Gero corn (*Penicillaria spicata*), is in common use for household purposes on the Niger and Gambia. The seeds of *Sorghum vulgare* are also extensively used for preparing as malt.—JACKSON, in *Technologist*.

THE WILD HEATH OF EUROPE (*Calluna vulgaris*), which was recently discovered to be truly indigenous in the United States, has also been proved to be a native of Newfoundland.

LARGE GROWER OF ROSES. H. Lane & Son's grounds devoted to Roses, near Berkhamstead, England, comprise 7 acres.

GATHER fruit in dry weather and with the sun shining, and place them as carefully in the basket as if they were glass. The smallest bruise commences a decay.

Horticultural Notices.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA

The Annual Meeting will be held at Easton, at the time and on the grounds of the State Agricultural Society, the 27th, 28th and 29th days of September. WILLIAM HACKER, *Secretary*.

PENNA. HORTICULTURAL SOCIETY.

MONTHLY DISPLAY, JUNE 14, 1864.

Best Basket Cut Flowers, F. O'Keefe, gardener to Joseph Harrison, Esq.

Best Hand Bouquet, Edwin Satterthwait.

Best Hanging Basket, F. O'Keefe.

Best 12 Roses, Hybrid Perpetual, (no names), Edwin Satterthwait. Best 12 of any other class, to the same.

Best 6 Fuchsias, D. McQueen, gardener to J. Longstreth, Esq.

Best Foreign Grapes, 3 bunches, John Landers, gardener to Dr. Geo. P. Norris. They were White Frontignan, of very superior excellence.

Best 1 quart of Strawberries, W. Parry. Russell's Prolific.

Best Collection of Strawberries, E. Satterthwait. (No list). Special premium to E. Satterthwait, for Lady Finger Strawberry of unusually large size and great beauty.

A Seedling Raspberry, by W. Parry, was favorably noticed by the Committee.

MONTHLY DISPLAY, JULY 12.

Best Basket of Cut Flowers, F. O'Keefe, gardener to Joseph Harrison, Esq.

Best Hand Bouquets to Jas. Eadie, gardener to Dr. Rush.

Best Hanging Basket, F. O'Keefe.

Best Collection of Carnations (seedlings, numbered), Meehan & Wandell.

Special premium to Meehan & Wandell, for a Collection of 33 named Verbenas. Also a Special premium, to the same, for 40 varieties of the Horse-shoe or bedding Geranium.

A Special premium to Allen Barr, for a beautiful Collection of Double Zinnias, and varieties of Zouave Petunias.

The best Raspberries, after a hard contest was awarded to A. L. Felten, for Hornet, its size, beauty and color, going far in a table competition.

Best Currants, to A. L. Felten. The Cherry variety—size and beauty telling here also.

Best Gooseberries, to Geo. Newman. For an English variety, called Belle of Canterbury.

John Landers had a Special premium awarded for fine Muscat Grapes.

A. L. Felten had three premiums awarded for Tomatoes, White Sprout Potatoes, and a Collection of Vegetables.

THE GARDENER'S MONTHLY.

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THOMAS MEEHAN, EDITOR.
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Hints for October.



FLOWER-GARDEN AND PLEASURE-GROUND.

In all our operations, *saving labor* should be our first consideration,—not that kind of labor-saving which half does an operation; but which will produce an equal result at a less cost. The introduction of grasses that will always remain green, and yet grow so slow as to require little mowing, is one of the new features in this line. Experiments are wanted with many kinds of native plants that are to be found in most localities. Of course, all those who propose new improvements or try novel experiments will be laughed at and pointed out as ‘hum-bugs;’ but that should not deter any one from following the path of progress.

All operations connected with ground-work are now being pushed forward rapidly,—grading, road-making, lawn-making, and so on. So much has been said of lawn-making in our past issues, that little remains to be said here. One of the best improvements in sodding a lawn is not to lay the pieces of sod close to each other. Pieces can be cut into any size or shape and laid down several inches from each other, the soil being loosely thrown aside by the trowel to make the surface of the sod and the surrounding soil be nearly level. On a large scale, a wide drill which any ingenious laborer could construct, or even a shallow furrow with a plow, as in ‘marking out’ for a corn-crop, might be employed, and the pieces of sod, about six inches square, set in four or six inches apart. A bush-harrow afterwards drawn over the lot, levels the loose soil in the spaces between the sods, and the roller afterwards passed over the whole makes a good, firm,

plane job. When the grass commences to grow in the spring, it soon spreads into the unoccupied spaces; and before midsummer, the whole becomes one uniform sheet of grass. This method, which may be called sodding by inoculation, saves just one half the cost of sodding by the usual mode, and is very near as good, in fact, quite as good, after a few months of time, and costs very little more than seeding-down, which, except under the management of one who thoroughly understands his subject, is one of the most unsatisfactory of all regular modes. Where seeding-down is to be the mode, now is the time to see about it.

The greatest difficulty we have to contend against in making good lawns, is the coarse, rank weeds with which most parts of our country abound; and no effort that can be made to guard against their introduction, or to provide for their eradication at the outset, will be ill spent. It is often an easy matter at first; but after they have once been suffered to establish themselves, it is often better to dig or plow up the whole surface and lay it down anew. Sometimes much may be accomplished in old lawns by digging out the weeds with a trowel or spade, filling up the holes with soil, into which the grass will soon run and obliterate the traces of the work. We saw a lawn of quite considerable extent last spring treated in this way, that, by the use of annual top-dressings of stable manure had been nearly ruined by the profuse introduction of orchard-grass, but which was renewed to its former beauty by the employment of a man three days in this way.

Where a choice can be had of a kind of grass for a lawn, in our opinion the perennial Rye grass (*Lolium perenne*), is the best for general purposes. Its shining green leaves, playing in the spring suns, give a very cheerful effect to lawn scenery. Its only drawback is that it will not bear very close mowing in hot weather if once allowed to grow long. Kentucky Blue grass (*Poa pratensis*), the Green grass of Pennsylvania, also makes a fine lawn.

The first two weeks in October will be the great tree-planting month of the fall season; and, as we have stated, the operation cannot be proceeded with too rapidly. In this region, at least, after the end of this month, every day's delay increases the risk of loss by the severity of winter; and, after that, we would not care to plant evergreens, unless they were comparatively small, and the operation conducted with great care. Occasionally great success follows later planting,—owing more to good luck than sound judgment. Where planting is, of necessity, delayed, the risk is made less by pruning. The later a tree is planted, and the more exposed the situation, the more in proportion should it be pruned. It has become a pretty well settled axiom in American gardening, that the way frost acts in destroying fall-planted trees is by excessive evaporation, by which the moisture is dried out of them; and this is to be obviated by shelter from cold winds, protection from the sun's rays, pruning, and other ways, which will suggest themselves to the reader according to his peculiar circumstances.

Many kinds of hardy annuals flower much better next spring, when sown at this season of the year. A warm, rich border should be chosen, and the seed put in at once. Early in spring they must be transplanted to the desired position in the flower-border.

Few things are more valued in winter than a bunch of Sweet Violets. A few may now be potted, and they will flower in the window toward spring; or small bed of them may be made in a frame, which should be protected by a mat from severe frost. To have Pansies flower early and profusely in spring, they may be planted out in a frame, as recommended for the Violet.

Herbaceous hardy border-flowers are often propagated in the fall, by dividing the roots; but, unless it is convenient to protect the newly-made plants through the winter, it is better to defer this till spring, as the frost draws out of the ground and destroys many. Where it is now resorted to, a thick mulching of leaves or litter should be placed over the young stock when transplanted.

Chrysanthemums now in flower should have their names and colors rectified, against the time when in spring they may have to be replanted, when they can be re-arranged with accuracy and satisfaction, according to the owner's taste.

Hyacinths, Tulips, Crocuses, and hardy Dutch bulbs generally, must have immediate attention. Crocuses and Snowdrops are often planted out in the grass on the lawn; the former is not very ob-

jectionable, as the leaves have so close a grass-like appearance; but the last should never be so employed, their foliage giving, the whole summer afterwards, a very coarse and weedy appearance to the lawn.

Hyacinths and Tulips may be set out in the beds devoted to summer-flowering bedding-plants, as they will, in a great measure, be out of flower before the bedding-time comes around, when they can be either taken up and transplanted to an out-of-the-way place to ripen, or the bedding-plants can be set in between where the bulbs grow, without either much interfering with the success of the other.

As a manure for these bulbs, nothing has yet been found superior to well-decayed sandy, cow-manure; but where this is not conveniently at hand, well-decomposed surface-soil from a wood will do as well.

Dahlias, Gladiolus, Tuberoses, and other plants that require winter protection for their roots in cellars, should be taken up at once on their leaves getting injured by the first white frosts. The two latter should be pretty well dried before storing away, or they may rot. Dahlias may be put away at once.

GREENHOUSE.

If there be any tender plants yet growing in the open border, that it is desirable to re-pot and keep in good order through the winter, no time should be lost in taking them up. Such plants are frequently lost or injured by bad after-treatment. Some few of the leaves should be taken off at the time of lifting, and also some of the more delicate and weaker shoots. The object is to preserve every leaf and shoot entire that can be kept without wilting. After some have been taken off, if afterwards it appears that some are yet likely to wither, keep taking off till the proper balance has been arrived at. It is a good practice, with the aforesaid object in view, to set the plants for a few days after potting in a cool and humid shed.

There are but few things in the greenhouse that will require special treatment at this time. Camellias and Azaleas, as they cease to grow, will require less water: but it is now so well known that moisture is favorable to growth, and comparative dryness favorable to flowering, that we need do no more than refer to the fact.

To watch for the first appearance of insects of all kinds, is one of the chief points of immediate interest in plant culture. If they once become nu-

merous, it is often better to throw away a plant entirely than doctor it after the old methods.

Bulbs for flowering in pots should be planted at once. Four or five-inch pots are suitable. One Hyacinth and about three Tulips are sufficient for each. After potting, plunge the pots over their rims in sand under the greenhouse stage, letting them remain there until the pots have become well filled with roots, before bringing them on to the shelves to force.

Many kinds of annuals also come well into play; among other things, Phlox Drummondii, Sweet Alyssum, Collinsia bicolor, Schizanthuses, Mignonette, and Nemophila are essential.

For winter-flowering, it is a good idea to keep an eye to those things which are near their natural season of blooming, instead of the more hazardous one of forcing thing on what ought not naturally to bloom for months afterwards. We have the natural system pretty well recognized as the correct principle in landscape gardening, and it might as well be introduced into this department also. Roses, of course, cannot be dispensed with; but even here the free blooming Tea and China Roses are infinitely preferable to the Mosses and Perpetuals often attempted. Roses intended for blooming, may be pruned in about one-third of their strong shoots, and have their weaker ones cut out. As soon as the buds show an inclination to burst, the plants may be repotted in a rich loamy soil, in well-drained pots. Oxalises make beautiful objects in the early spring, if potted now. A rich sandy soil suits them well. Three or four bulbs are enough for one pot. They do not do well too thick together. O. Bowiei, O. flava, and O. versicolor, are well-known and popular species.

Where many flowers are desired for bouquets in winter, a good stock of such as flower easily should be provided, especially of white flowering kinds, without a good sprinkling of which a bouquet has but a very common-place look. Deutzia gracilis and D. scabra, Philadelphuses, and Tamarix are very good hardy plants to pot for winter-flowering. The Iberis sempervirens is also a splendid white to force for its white flowers. Lopezia rosea is nearly indispensable for giving a light, airy gracefulness to a bouquet; and Camellias and Azaleas cannot possibly be done without.

All succulents may be kept in the driest part of the house, and get little water through the winter.

The flat-leaved or Epiphyllum section is an exception. E. truncatum blooms through the latter part of the winter, and so must be kept growing.

FRUIT GARDEN.

Sometimes fruit trees are unproductive from other causes than poverty of the soil, or neglect of the orchardist. They often grow too luxuriantly to bear well. In this case root-pruning is very effectual, and is performed by digging a circle around the tree, with the circle made close to the trunk of the tree. A fifteen year old tree, for instance, may be encircled at five feet from the trunk. No rule can be laid down for this: judgment must be exercised. If cut too close, the tree may be stunted for years, and if too far, it will not be effective. The aim should be to reduce the roots about one-third.

Established orchards, on thin or impoverished soil may be renovated in the following manner: If a tree has been planted say fifteen years, and attained the size we might expect in that time,—get, say ten feet from the trunk, and dig a circle two feet deep all around it, and fill in with a good compost: the effect the next season will be quite marked. If the tree is older or younger, the distance to start with the circle from the trunk will of course be proportionate. A top-dressing will also be of great assistance, as well as a vigorous pruning out of all weak or stunted branches. Moss and old bark should be also scraped off, and if the trunk and main branches can be washed with a mixture of sulphur and soft soap, much advantage will follow. Old decayed bark on fruit trees is always a sign of a want of vigor. When a tree is growing thriftily it cracks this old bark so freely, as to make it easily fall off; but when the tree is weak and enfeebled, the bark often becomes indurated before it has got cracked, and in this state the tree becomes what gardeners call 'hide bound,' and artificial means must be afforded to aid the tree to recover. In the cherry and plum trees this is easily done, by making longitudinal incisions through the bark with a sharp knife. In the peach and apricot also, this process has been employed with advantage, in spite of the learned theories which have attempted to show up the absurdity of the practice.

VEGETABLE GARDEN.

Roots of most kinds, such as Carrots, Beets, etc., should be taken up before the frost is severe. They all keep best packed in the sand in the open air, but it is too inconvenient to get at them in winter: hence cellars are employed to preserve them in. Cellars for this purpose should be cool, say with a temperature of about 45°, and not at all dry. It is not meant that it should be damp, as the roots will become rotten, but it must be moist enough to prevent shrivelling.

Cabbages can be preserved in such a cellar, though most prefer them in the open air. One way is to pack them closely together with their roots uppermost, and then cover them with soil, on which straw or litter is thrown to keep them from freezing. By being packed this way, the water cannot get into the hearts, which is one of the chief causes of their rotting. Where plenty of boards can be had, they may be packed with their heads uppermost, and the rain kept off by the material.

Broccoli and Endive may be taken up with balls of earth, and set in cool cellars closely together, and they will grow sufficiently—the former to produce good heads, and the latter to blanch beautifully all through the winter.

Asparagus beds should be cleaned, by having the old stems cut off and the soils from the alley ways dug out and thrown over the beds. It keeps the frost from the roots, and thus permits them to grow and lay up matter all winter for next spring's growth. Very early in spring the soil should be raked back into the alleys, so as to leave the roots but a few inches under the soil, as the nearer they are to the sun's rays, the earlier will the crop be.

Celery must have continued attention to blanching as it grows, care being exercised to prevent the soil from entering the heart. Where very fine results are desired, the plants should be protected from early severe frosts, so as to enable the plants to grow, without injury as long as possible.

Lettuces sown last month will now be large enough to set out for permanent growth. A common hot-bed frame, set on a bed of leaves or spent stable-manure, will enable one to enjoy delicious salad all through the latter part of winter, where sufficient protection against severe frosts can be secured. In these hints it is more of an object to preserve them through the winter for the purpose of setting out in the open air in spring. In the warmer States this can be readily effected by their being set out in the open air in a sheltered place. Here in Pennsylvania they often do very well by having the ground thrown into ridges about six inches deep, running east and west, and the plants set out on the northern sides. They have a little straw thrown over them in severe weather, and get through the winter admirably, heading early in spring. The Early York Cabbage is extensively grown the same way. Where the climate is too severe to allow of this, they must be put under cover of shutters, as has been before described in our Hints.

Communications.

PROPAGATION OF GLADIOLUS.

BY E. S. R., JR., BOSTON, MASS.

All growers of this beautiful plant have doubtless experienced difficulty in increasing the stock of fine varieties. Imported bulbs are weak, and if they produce one or two good bulbs the first season, we are fully satisfied. The attention of gardeners and amateurs who wish a large supply, has been latterly directed to increase by means of the seed bulbs, which in all varieties are plentifully produced around the roots of the parent plant.

These bulblets are hard and covered with a thick black scale, and want the external appearance of true bulbs. The common practice has been to sow these in pots or frames, either in fall or spring, but the result has generally been unsatisfactory, the greater part not germinating, and being at the end of six months as hard and apparently lifeless as when first planted. A mere accident has shown how this difficulty may be overcome.

In the autumn of 1862 I saved all the bulblets from a choice collection of Gladiolus, bagging each variety by itself, and put the whole away in a cupboard in my library, intending to plant them in the spring of 1863. By some chance they were overlooked, and not found till late in May of the present year. I at once pronounced them worthless, (for the cupboard was very dry, the flue of the furnace running behind it), as the bulblets were so dry that on being shaken they rattled like shot. A young friend standing near who had just started a boy's garden, asked me for them; and of course I gave them to him, first however telling him not one would ever germinate. He sowed them in drills like peas, in a light rich soil. To our great surprise, in ten days they came up as thick as grass, grew with astonishing vigor, and are now (August) larger than my seedlings of 1862, and will all form flowering bulbs for 1865.

As a contrast to this I may say, that out of some large beds of bulblets last year (1863), sown in the open air this spring, in a precisely similar soil and location, owing to the continued drought I have not a dozen plants up.

I give you these facts, trusting they may lead to the universal propagation of the fine varieties of this splendid flower.

MISCELLANEOUS SKETCHES.

BY ORCHIS.

TAXUS ADPRESSA—KNIGHT.

No class of plants for ornamental purposes is so greatly needed in this country, as that denominated 'Evergreen Shrubs,' and there are a number of the more recent introductions that have been sufficiently tested to recommend for this purpose, but which are evidently overlooked. In France and England, this department of plants forms one of the most interesting and beautiful features in their cultivated grounds; and the extensive groups of Laurels, Bays, etc., invariably excite the admiration of Americans when visiting their collections.

A severe changeable climate may in a great measure be offered as an extenuation of our fault, for not devoting more attention to these charming attractions; but nevertheless there are a great number that can be cultivated satisfactorily here with little or no risk to the owner.

In the entire list of available plants for this purpose, we know of none that will take precedence over the subject of this sketch; having grown it for several years in a great variety of soils and situations, and with every opportunity to test it thoroughly, we now recommend it to the attention of planters, with feelings of the greatest pleasure, having full confidence in its future usefulness.

It is a native of Japan, in the mountainous districts, and growing generally to the height of two or three feet, but in cultivation with us it even exceeds that height. Two specimens in our collection measure respectively 3 and 4 feet high, each being 5 feet in diameter. These plants have been subjected to the vicissitudes of eight or ten winters without protection, and are now perfect models of beauty. The branches are very numerous and diffusely spreading, thickly furnished with many small branchlets, that are frequently found in clusters at the ends of the branches.

The leaves are flat, decurrent, quite coriaceous, mucronate, oblong, occasionally acute, and irregularly distichous.

The fruit consists of a large oval, nut-like seed, erect in the broad, shallow basin of its fleshy, cup-like disk. In this latter characteristic it differs from the remainder of the family. In the other species and varieties, the seed is generally very much sunken, and the pulpy covering is quite thick and bright red or scarlet in color. In the *T. adpressa* this fleshy disk is of a light salmon color, much thinner than the others, very mucilaginous, and slightly bitter to the taste.

The apex of the seed in this species is quite pro-

minent, and generally on a level with the apex of the disk—a very distinctive feature.

As much confusion has arisen in the nomenclature of this plant, we have been thus particular in describing its peculiarities, for the purpose of aiding it to assume its true position.

The *Taxus adpressa* was first introduced into England, we believe, by Siebold, under the name of *Cephalotaxus tardiva*, and subsequently described by other writers as *C. adpressa* and *C. brevifolia*, foreign authorities and nurserymen frequently to this day retaining these names. Carrière placed it originally as a variety of *Taxus baccata*. Lawson claims it as a species, with the name of *T. tardiva*; and Knight formerly called it *P. sinensis tardiva*. But from all absence of information in regard to the fruit, we are led into the belief that none of these authors were acquainted with this main distinctive criterion.

Gordon, in his recent work "The Pinetum," says: "Fruit, said to be like that of the common Yew, but smaller;" thus making a sad and unwarranted blunder.

Carrière, in the *Revue Horticole*, thus alludes to its generic claims, but is evidently ignorant of its specific distinction, viz.: "Fructification is undoubtedly the most important of all characters in establishing the generic differences of plants, and that which leads to a most exact and critical classification."

The *T. adpressa* is a manifest proof of the truth of this remark. Considered by some as belonging to the genus *Cephalotaxus*, and by others as a *Taxus*, it, in this way, wandered between two genera, although intelligent horticulturists had practically recognized its relations with the common Yew, of which, perhaps, it is only a peculiar form. This degree of affinity or parentage had been developed by engrafting. In fact, when the *Cephalotaxus* is engrafted on the *Taxus*, it either does not take, or if it does, languishes, and lives but a short time. But if this pretended *Cephalotaxus* is inserted in a Yew, it takes readily, and may flourish for years. This mark of organic affinity refers it most evidently to the *Taxus*. The *Cephalotaxus adpressa* of our nurseries should, therefore, most certainly bear the name of *Taxus*."

Having had ample opportunity to examine this plant in all its various stages of inflorescence and fructification, we feel perfectly satisfied in placing it as a true species; and as we have proved its hardiness, and believe it to be a first-class ornamental shrub, can confidently recommend it to all our planters.

ORANGES IN THE UNITED STATES.

BY H. T. WILLIAMS, BROOKLYN, N. Y.

To many of the readers of this magazine, a few words upon such an unusual subject as the above, may prove the agreeable means by which a half hour may be pleasantly whiled away. To some of us, accustomed from childhood to look upon these golden colored fruits as coming from a far distant land, even from across the ocean, the announcement may be a surprise that in our own land, and in fields far nearer than any other portion of the globe, there grow Oranges whose delicious flavor and fine size have been in but few cases ever surpassed. To those, however, who are well versed in the horticultural history of the Southern States of this country, there will be no surprise, and these lines will be but an interesting recapitulation of the knowledge previously gained.

The Orange was once an object of culture, and for a long time, in Carolina and Georgia, and in 1762, it will be seen by the London "Annual Register" for that year, there were shipped *four* barrels of this fruit from Charleston to England. And mention is even made of it down to as late a date as 1830 or 1840. Mrs. Frances Kemble, in her "Journal on a Georgian Plantation," speaks of the island on which she lived, which was once entirely surrounded with a double row of Orange trees, all as large as the noblest apple trees. Basil Hall arrived there in the course of his travels, in the season of superabundant blossom, and declared it the noblest sight he had ever beheld: "it was far more worth crossing the Atlantic to see than the far famed Niagara." One of these trees bore the incredible number of 8542 Oranges. Of these noble trees, at the time of her residence, nothing was left but their unsightly stumps. Even now, scattered here and there throughout those States, cultivated in private gardens, and sheltered from frosts and cold sweeping winds from the north, there exists trees in good health and preservation. But they are only few.

Oranges did once live and grow in the states of Mississippi and Alabama, however only along the sea coast; but at last the exceedingly sharp stormy winds, and rapid change of temperature completely prevented their acclimation there. But the case has been somewhat different in Louisiana. Those of us who have been accustomed to peruse the records of travellers in that State, will find scattered here and there throughout their pages, descriptions of beautiful Orange trees and groves, and in all our histories mention has been made as far back as the first 25 or 50 years of its settlement. Living as it does a precarious life in a climate, which north of

New Orleans is ever changeful, yet it lives, and though smitten now and then to the ground by a merciless frost, it again sprouts, and grows up again with exuberant shoots. South of New Orleans, however, it lives and thrives all the year round, suffering but little from frost or other causes. A gentleman, in 1853, writing to the Commissioner of Agriculture, states that in La Fourche District, Louisiana, "Oranges are cultivated, and 300 to 400 bushels are produced to the acre." This account does not seem strange to us, when we have read from army correspondents mention made of the banana and other tropical and semi-tropical plants growing on the banks of the Mississippi, between New Orleans and its mouth.

Westward we will go a little farther—to Texas, and show our testimony:

"The Orange flourishes in high perfection in Galveston Bay, at New Washington. Mention is also made of Orange trees in the garden of a prominent citizen of that place, as being loaded with large fruit of delicious flavor. This grove stands on an elevated bluff, exposed to the North wind without the smallest protection; yet it was uninjured during very severe weather, which was even colder than that which occurred in the memorable year of 1837-38. New Washington is at the mouth of the San Jacinto, and is nearly in lat. 29° 30'

Nearly all the histories of this State speak of the growth of the Orange in various parts, and in some places flourishing in perfection; but, according to Yoakum, "the Meteorological Record shows that the whole country is subject too often to cold winds and frosts, for the fruit to be relied upon to any certainty." This statement is verified by travellers and other reports, which show that the cold 'Northerners' which invariably prevail in that country, will prevent any fruit tree from living and flourishing to any advanced age without injury.

But even this is not the most western point of its growth, for we have full accounts of its growth in California—flourishing there by the side of the vine and pear tree, and yielding in a most prolific abundance. Its culture, however, even there, in a congenial climate, is not extended, and is not considered of equal profit with that of a vineyard of the same extent.

There is one State to which all these unfavorable remarks, before spoken of, will not apply—the State, or rather the peninsula, of E. Florida. Here the Orange finds its proper congenial climate, flourishing to its fullest extent, fearing nothing from frosts or cold winds. It is proper, however, to state that these remarks apply only to that sec-

tion below the 29° of latitude; above that degree the tree will not succeed. I propose here to state the nature and characteristics of this tree in this state, as set forth in various extracts, written by prominent or trustworthy persons, and which will place the matter in its fullest light before public.

The *Citrus aurantium* or Golden-fruited Orange tree, under favorable circumstances, attains a height of 25 to 30 feet, its usual height however being from 15 to 20 feet, and is graceful in all its parts. The trunk is upright, and branches into a regular or symmetrical head. The leaves are moderately large, beautifully shaped, of a fine healthy green, and shining on the upper sides, while the under sides have a slight appearance of down. The flowers occur in little clusters on the sides of the branches are pleasing in their form, of a delicate white in the sweet Oranges, and in the more acid varieties slightly tinged with pink. In some plants they have a more powerful odor, and are for the moment more rich, but in the Orange grove there is a fragrance in the aroma which never satiates or offends; and as the tree is at one and the same time in all stages of its bearing, in flower, in fruit just set, and in golden fruit inviting the hand to pull and the palate to taste, it is hardly possible to conceive or imagine any thing more delightful. The glorious beauty of such a scene is described by the "Naturalist in Bermuda" with these pleasurable emotions:

"Delicious beyond description is the perfume emitted from the expanded blossoms of these bearing trees, and more particularly of a calm evening, after a copious fall of rain, when the sun is re-appearing in subdued brightness and splendor, gilds each cedar-crowned hill and lowly cot with its falling beams, the powerful scent of the citron tribe mingled with that of the cedar, is exhaled in such copious quantity, as forcibly to impress the imaginative with a realization of those fairy lands of ancient fable, when gorgeous palaces, inhabited by rich and happy princes, were fanned each live-long day by balmy breezes, heavily laden with the odorous incense."

These sentiments are still further echoed by Trumbull, who says:

"Of all the new enjoyments of which the knowledge is acquired by a visit to the inter-tropical regions, those that reach us through a sense, which in the old world is productive of as many painful as pleasurable emotions, are, in my opinion, the most exquisite.

Without leaving Europe, a traveller may learn how delightful it is to take his early walk in an

Orange grove, during the season when the trees are in bloom. The gardens of the Tuileries may give him a faint idea of it, just before the ancient denizens of the *Orangerie* have been despoiled of their crop of blossoms, that the distiller may convert them into Orange-flower water. But the fragrance of the Tuileries is as inferior to that of the Moorish gardens of the Alcazar at Seville, as these last, with all the care bestowed on them, are excelled by some neglected Orange grove in Cuba or St. Domingo."

Nor is the rich fragrance of the Orange grove to be celebrated in the sentiments of prose writers alone, but is referred to by the Poets. Cowper thus says of

"The golden boast
Of Portugal and Western India, there
The ruddier Orange, and the paler Lime,
Peep through their polished foliage at the storm,
And seem to smile at what they need not fear."

Grainger, a poetic writer of the West Indies, among his numerous references, speaks of the places where

"the Lemon, Orange, and the Lime,
Amid their verdant umbrage, countless glow
With fragrant fruit of vegetable gold."

And in the many lines which are filled with homely advice to the planter of his native isle, he encourages the cultivation of this fruit in the following words:

"With Limes, with Lemons, let thy fences glow,
Grateful to sense, now children of this clime.
And here and there let Oranges erect
Their shapely beauties, and perfume the sky."

And again, in another part, he repeats the same advice, telling his readers to fence around their tracts:

"with hedges, or of Limes,
Or busy Citrons, or the shapely tree [Orange]
That glows at once with aromatic blooms
And golden fruit mature."

The fragrant blossoms are made the emblem of chastity, from the purity of their white petals. One of the principal beauties of the Orange tribe consists, as above expressed, in its bearing fruit and flowers at the same time, as is beautifully noticed by Pope:

"Here Orange trees with blossoms and pendants shine,
And vernal honors to their autumn join,
Exceed their promise in the ripened store,
Yet in the rising blossoms promise more."

An Orange tree, with fruit and flowers, has been chosen as the emblem to express Generosity, and therefore like that noble feeling, continually tending to the communication of benefits.

The Orange is found to flourish best in a warm fertile soil, composed of a moderately rich loam, or

partial sand and clay, not too dry, and sheltered from chilly or parching winds. But it is cultivated in varied soils, and will flourish in any country with a mean annual temperature of 62° to 84° F.

That temperature and soil it finds to its finest extent in Florida. St. Augustine has been the famous spot from which the Oranges of Florida have obtained their reputation; the reason for this is stated to be as follows, by Homans:

"The St. Augustine Oranges are superior, both in size and quality to those of Cuba or the Mediterranean. They resemble those of Havana in flavor, but are much larger, and bring 20 to 30 per cent. more in the New York and Boston markets."

St. Augustine being the principal shipping port, nearly all the Oranges from the interior were brought thither and from thence were transported to the North.

From the accounts of the earliest, and even the latest travellers in that region, we find that in all parts of Florida below 29° of latitude, the St. John River is lined with these wild Orange groves, spreading in every direction, far, far back into the interior; found principally in the hummocks.

Wherever the Orange grows it is an evidence of good land. In some parts it has been so abundant that the planters living near always collect the fruit, and by means of a horse will press out the juice, and then sell it to the barkeepers, or send off to different markets, where it is used for cooling drinks: and to this day, even in the reports of our army correspondents, mention is made of the luxuriant groves on the St. John's and around Pilatka.

J. L. Williams, the historian of Florida, mentions many places where the Orange grows, and speaks more particularly of St. Augustine, to which subsequent reference will be made. Marion and Alachua and other interior counties are described as abounding with him. Pilhuena island, in Lake Ware, is described as a rich and romantic spot; its luxuriant Orange groves are said formerly to have overshadowed a red sprig of royalty, who appears at least to have possessed some taste in rural scenery. Mention is also made of the several islands or Keys, which contain many fine trees. A settler, writing to the Department of Agriculture, from Tampa Bay, mentions its growth there, and says:

"On the hummock lands we can realize from 300 to 400 barrels of Oranges, Lemons, or Olives to the acre. Pine lands, with proper attention, can be made to produce 200 barrels per acre.

An average sized adult Orange tree will produce 1200 to 2000 fruit, although many large trees will produce 4 to 6000. One-sixth are unfit for exportation, the rest good.

Of the smaller sizes, it requires about 300 fruits to fill a barrel; but of the largest ones only 100 are necessary.

Another settler, at Miama, writes to *DeBou's Review*, and states:

"The Lime is now an abundant crop, and shipments of them to Charleston and Savannah have netted \$20 per barrel. The product per acre may be estimated at 30 barrels. Preserves made from the Citron, Lime and Guava, are always in demand and may be prepared for market extensively."

Still another, in the vicinity of St. Augustine, writes, in a letter to a prominent editor:

"They are commonly planted by cuttings and layers, and in seven years after planting arrive to good bearing. Each tree, a few years after, upon an average, bears from 12,000 to 16,000 Oranges, and some have been known to bear 26,000. The Orange grows spontaneously near New Smyrna, in E. Florida, on Fish's Island, is the most celebrated Orange grove in the world; some trees still remain that are 30 feet in height."

All these accounts show the prolific abundance of the fruit, as also the intense interest each inhabitant feels in the cultivation of this favorite tree. The Orange is to them of the same nature as the grape and peach and apple are to us; the olive to France and Spain; the date to N. Africa; the cocoanut to E. Indies; and the banana to the West Indies, an ever plentiful harvest of never failing fruit.

(To be continued.)

HOW TO FILL A VASE.

BY ZETA PSI.

How few people know how to fill a garden vase so as to look well! It is a sad fact, that three-fourths of the vases that we see are filled with so little taste that the whole effect is ruined.

Having seen various vases well filled, we propose to describe the *modus operandi* for the benefit of the readers of the *Monthly*.

First, then, the vase. It should be made of terra cotta, if we would be humble; of marble if we would be grand. Of course the latter is much preferable, if we can afford it; but, if not, terra cotta, painted white, makes a very good substitute. Do not have iron vases—they are certain to kill the plants, from the iron becoming heated and warming the earth to such a degree that the plants die. We know of some friends of ours, who, being unfortunate enough to have purchased iron vases, invented a very good plan to overcome the difficulty

resulting from them. They took a small nail-keg and placed it inside of the vase—leaving previously bored several auger-holes in the bottom for drainage. But, with terra cotta ones, or what is prettier, vases made out of rustic work, this is unnecessary.

Well, supposing we have the vases to suit our taste, the next matter to be attended to, is the mould with which to fill them. We have found that mould, such as is used for potting in a greenhouse, answers admirably. The soil must be rich, however, as the roots of the plants are very much crowded together in a vase, and require a great deal of nourishment. The method of putting the soil in the vase is as follows: Place good 'crotches' (as the gardeners call them) over the holes in the bottom of the vase, and fill in about two-thirds of the depth of the inside of the vase with the soil, referred to above, pressing it quite firmly.

Now we are ready for our plants. What shall we put in it? We will try to answer this question. Select for the centre some upright growing plant—we have found Fuchsias, Scarlet Geraniums and Rose Geraniums to answer admirably, provided that they are kept pruned severely to make them grow bushy. We have seen Roses used as center plants, but they do not answer, as their roots require more room than can be afforded them in a vase. Having placed one of the above-named plants in the center, we must find something of a creeping nature for the sides, to hang down over them, and give to the vase a graceful look. For this purpose the two kinds of *Tradescantia* (*T. discolor* and *viridis*) answers admirably. Blue Lobelia, Boston and Kenilworth Ivy, Sweet Alysium and P. Periwinkle may be used with the *Tradescantia*, with good effect.

We have seen a beautiful vase, with nothing in it but Periwinkle. The effect was charming, but it would not do for a sunny situation, as Periwinkle thrives best in the shade.

EVERGREEN TREES AND SHRUBBERY.

BY WALTER ELDER, PHILADELPHIA.

Throughout my circuit, which is a wide one, I observe every year that a great deal of the landed property changes hands. Sturdy farmers, who can see no beauty and can find no pleasure in any thing but over-cropping their lands to coin money, are selling out for high prices, and moving to the new and cheap lands in the far West; and a better class of people are settling in their places, who can appreciate the useful and beautiful combined. Many

take the *Monthly*, and have already begun to improve, by making walks, and planting trees and shrubs, as well as flowers. I am frequently asked to furnish lists of choice trees and shrubs, suitable for their wants; so, as those who read the *Monthly* and need such information may have them always beside them for reference, I have concluded to send you lists. I hope none of your experienced readers will think them meagre, as they are intended mainly for new beginners.

I will begin with *Evergreens*, as they are transplanted earlier in fall. Shrubby will follow, and next flower-vines and creepers—then Deciduous trees and finish off with Herbaceous plants and flowers.

In embellishing pleasure grounds with trees, shrubs and herbaceous flowers, evergreen trees and shrubs should form a prominent feature. For, without them, the best laid off grounds would be like barren wastes during winter; indeed, the whole world would look desolate one-half of the year without evergreen trees and shrubs. They are one of the greatest blessings that the Creator has bestowed upon the earth.

A judicious selection of varieties to suit the various soils and aspects, with proper arrangements, so as to give a characteristic beauty and harmony to the whole grounds, constitutes one of the Landscape Gardener's highest attainments. Some look most noble in the distance; others look best but a short way off, and the beauties of others are only seen at close view. Groups and groves may be needed for shelter, and to shut out unsightly objects. Nothing is so effective for such purposes as evergreen trees and shrubs; and nothing can give a place such a lively appearance in winter. The gigantic *Pine*, standing erect in his majestic grandeur; the glittering *Silver Fir*, of lofty stature and symmetrical form; the *Norway Fir*, of grand proportions, rising in graceful folds from its base to summit; the noble *Hemlock Spruce*, with its beautiful green and compact form; the *Balsam Fir*; the graceful *Cedrus deodara*, with its pale foliage; the *American Arborvitæ* and *Evergreen Cypress*; those tall and slim *Junipers*; the large *Holly*; the *Auracaria imbricata*, with its singular structure; the green *Tree Box* and *Yews*, which contrast so well with all the *Arborvitæ*s; and the variegated *Holly* and *Box Tree*, are all appropriate subjects for the Landscape Gardener's art.

All of the above are perfectly hardy, and easy of culture, and will flourish upon a great variety of soils if properly transplanted. Their cost is small. A large number can be grown upon small grounds, by keeping them at moderate sizes by clipping.

We saw in one of the nurseries, lately, Norway Fir trees seven feet tall, with the lower branches spreading ten feet in diameter, and so massy that the foliage only was seen.

Evergreen hedges are the most beautiful enclosures for pleasure grounds. September and October, and April and May are the best months to transplant all kinds of Evergreens.

A FEW NEW BEDDING PLANTS.

BY P.

Every year I purchase what promise to be some of the best newer annuals and bedding-plants, and am often disappointed in adding improvements, though occasionally I find much of interest. As the experience of others often assists those who follow after, I have made a few notes for the *Monthly* of mine.

The best plant of the season, among leaf plants, I think is

Coleus Verschaffeltii. This is something in the way of the old *Perilla Nankiniensis* in color, but a much more delicate and pleasing incline. It does not begin to grow much till midsummer out of doors, and the color is not near as delicate before it grows. I set out half a dozen plants into one small bed, about one foot apart; but they would have been much better if set 6 or 9 inches apart, on account of their not growing till so late, the surface of the ground is left exposed too long. In my idea, one of the chief points of good flower-gardening in our climate is to get the surface soon covered with foliage.

Another very pretty leaf plant is one I got from Philadelphia a few years ago, under the name of

Amaranthus tricolor. I made a border around a small bed last spring, and was at first much disappointed. The plant did not grow more than six inches high, and so made a pretty bordering; but there was more of the beautiful orange and pink tinge than the plant has on when in the greenhouse all winter. Early in August, however, the beautiful colors began to appear, and at the present time, September 1st, it is one of the prettiest things in my beds. It makes a glorious show in a vase.

Another admirable variegated plant is

Vincetoxicum major variegatum, for a vase or garden bordering it cannot be excelled.

Sedum carneum variegatum, so far as I can judge from one plant, obtained from your advertiser Mr. Peter Henderson, last spring, promises to make a valuable addition to my bedding plants.

I have tried over and over again to make some-

thing of the beautiful *Variegated Geraniums*, often referred to in your interesting extracts from foreign journals, but I cannot get them to grow enough in the sun to be very effective for me.

In the way of annuals, the one that pleases me most is the

Nycterenia violacea. This is as pretty a blue as the *Eutoca viscida*, or *Whitlavia grandiflora*, and seems to stand our summer suns much better. It is now in full bloom, after flowering all summer. Its thorny capsules are however most atrocious—worse than the Burr grass (*Cenchrus*), so common in the wild sands of New Jersey.

Macharanthera tenacitafolia is another pretty annual with flowers like a *Cineraria*, and finely cut leaves is pretty, and seems to grow well. The color is pale lilac blue.

Pecten angustifolia is a neat dwarf annual with golden yellow flowers, covering the whole plant which looks like a golden ball set on the ground.

Palafocia Hookeriana has larger and brighter purple flowers than the older *P. texana*, and will be a popular border flower.

Lobelia Paxtoniana, recommended last year in the *Monthly*, does honor to the recommendation. It is a dwarf white variety, with flowers as large as *L. marmorata*. My plants, however, gave over flowering about middle of August. This may be accidental, but I should like it better if not liable to such accidents.

Anodu Wrightii, *Thunbergia Barkerii*, *Thyrsacanthus colubrinus*, *Helipterum Sandfordii*, *H. anthemoides*, *Amphicarphe intermedia*, and some others, gave me no satisfaction whatever.

The first flowers of *Oenothera Lamarkiana*, pleased all my friends, and we thought it a great treasure; but the succeeding flowers got smaller, and the plant then had such a weedy look, that we do not consider it a great acquisition.

LILIUM AURATUM.

BY J. W. WOODS, WASHINGTON HEIGHTS, N. Y.

Have you seen the new Japan Lily yet (*Lilium auratum*). I have a plant of it in flower now, one of a few bulbs obtained from Mr. Hogg in Japan, a short time ago; and, without exaggeration, must say it is magnificent.

The plant is about 20 inches in height, leaves linear lanceolate, half an inch broad, and three inches long; corolla broadly bell-shape; three inner petals seven inches in length by three and a quarter in width; outer petals the same length but narrower, and spotted all over with a crimson red or

brown; about two inches of the apex of the petals reflexed; stamens and pistillum prominent exerted; anthers one inch long, covered thickly with the bright cinnamon pollen. Up the center of each petal runs a broad stripe of clear bright lemon color. Added to this it is delightfully fragrant—something like a mixture of Tuberoses, Orange blossoms and Cape Jessamines all mixed up together; and though (of course) I have not yet proved it, yet there is not the least doubt but what it is perfectly hardy, as every thing I have received from the same locality has proved as hardy as our native plants here.

[We shall be very glad to have notes from our correspondent of his Japan plants as they flower.—Ed.]

LETTER FROM JAPAN.

BY THOMAS HOGG.

I have recently received a very interesting letter from our common friend, Thomas Hogg, now travelling in Japan, as you no doubt are aware. There is so much in this letter that is interesting and valuable to the horticultural community at large, that I should be selfish and unjust in withholding it from the public. I therefore send it to you for publication, entertaining no doubt that your readers will feel thankful for it.

You will observe that he speaks of seeing a striped-leaved variety of our Indian Corn. There seems to be a certain kind of 'predisposition' in Indian Corn to become striped. It is no uncommon thing, as you are doubtless aware, for a stalk 'here and there' to come striped, or entirely white; but the 'sport' never seems to set. The variegation works out, and the white stalks either die, or live an unproductive life. There would seem, however, to be something in the soil or climate of Japan, (or the skill of its gardeners), that not only produces variegation, but sets it permanently. Since examining the many rare and beautiful plants sent home by Mr. Hogg, this subject has occupied much of my thought. If I should reach any new or satisfactory conclusions, I will let you know.

In regard to 'variegated vegetables,' we already have a beginning in Beets, and an occasional Carrot; but the finest thing in this way that I have yet seen, is a beautifully striped *Leek*, raised by my learned friend, Dr. Siedhof. If he could only succeed in propagating it, it would make a handsome ornament for the flower border. But I must close this rambling letter, for want of time to say more.

Yours, very truly, PETER B. MEAD.

[Mr. Mead touches on a very interesting topic—

the preservation of the variegated character through seeds. We have no doubt it will someday be accomplished. A raiser of variegated-leaved seedling Geraniums tells us one-third of the seedlings maintain their character.

Mr. Hogg's letter is a particularly interesting one, and our readers will unite with us in thanking Mr. Mead for communicating it.—Ed.]

KANAGAWA, June 21st, 1864.

PETER B. MEAD, ESQ.—Dear Sir: So much has been written by others about the natural products of Japan, that little remains to be said, having reference entirely to the limited range foreigners are permitted access to. Mr. Fortune's book being especially devoted to such subjects, is, of course, the most complete. Hodgson, in an appendix to his book, has a catalogue of native plants which I have not had an opportunity of examining. Mr. Veitch contributes to Mr. Alcock's work valuable notes on the plants of Japan and its agriculture. He has, however, fallen into some few errors, which it may be as well to correct.

Among the plants enumerated as growing wild, are *Nerium oleander*, *Vinea rosea*, *Balsamina hortensis*, *Celosia cristata*, and others, which are undoubtedly all introduced; certainly they are not found growing in a wild state in this neighborhood. In another place he speaks of wild strawberries, probably referring to a *Potentilla* bearing a profusion of tasteless fruit, very much resembling a small strawberry.

In my last I gave the names of some exotic plants cultivated by the native gardeners. To these are to be added the Chinese *Hibiscus*, *Pomegranate*, *Echinocactus Eyriesii*, and *Epiphyllum*, *Justicia carnea major*, a *Quisqualis*, *Myrtus tomentosa*, *Tecoma jasminoides*, *Sago Palm*, *Oxalis Bowii*, *Ardisia crenulata*, and another species of which there a dozen varieties, with variegated and curled foliage, with red and white fruit. They are entirely unique, and, indeed, I have seen no more valuable acquisitions in variegated plants, or any possessing greater interest than these as most beautiful additions to the already numerous list of hothouse plants of that character. These exotics could only have been received from the Dutch and Portuguese in early times; and, considering the limited intercourse allowed with foreigners, they are evidence that the florists of Japan are not without enterprise in their business, and ready to avail themselves of every opportunity of adding rare and beautiful plants to their collections.

I was surprised one day, on showing a prominent Japanese merchant a representation in stone of

some foreign Pears, to see that he recognized the fruit, and to hear from him that a few trees were growing in the garden of a doctor at Miaco. I felt inclined to doubt his statement, thinking he was confounding them with the native varieties. He had, however, another name for them, and insisted on the correctness of his knowledge; also stating that the M.D. used the fruit for a medicine; an excellent way of disposing of his crop at remunerative prices. If they are foreign pears, it is singular they have not been distributed.

One cannot help feeling a regret, aside from commercial interests, of the mutual consents given by other governments, to the closing, for the present, of Kioto, the port of Osaka, near Miaco. That city is the Paris of Japan, wherein is collected all that is rare and beautiful. As many as are the floral treasures obtained here, I have not the slightest doubt many more could be added to the number, if we were allowed to explore the gardens there.

Not the least beautiful of Japanese plants is the Iris, of which many varieties are cultivated, from the purest white to the darkest blue, with all manner of intermediate shades and pencillings. I shall have a collection to send home the coming autumn; and if they survive and bloom, when you see them you will agree with me in saying their merits deserve that they should be classed as a 'florists' flower.'

An addition to the conservatory will be *Magnolia parviflora*, a species after the style of *M. pumila*, only of a more robust growth, with pure white flowers of a delicious fragrance.

The Maple, in all its variety of variegated and dissected leaves, will prove to be among our finest acquisitions of ornamental hardy trees. The golden-leaved Pines are also to be included in the list of decided novelties. I fear the difficulty of transporting them safely so great a distance will prevent their introduction for some time, or until some one, one can some personal attention to them on the voyage.

I flattered myself this spring that I had obtained from Yedo a collection of twenty varieties of Tree Paeonies, having given a dealer here directions to obtain that number of the most distinct and best from out 40 or 50 he said were cultivated. I believe he performed his part to the best of his knowledge; but, unfortunately, he had to purchase them in bud, and when they bloomed I found only six or eight sorts. These, however, although not what I expected, will prove valuable as a source from which new sorts may be obtained by hybridization.

A fine addition to the greenhouse is an orchid very similar to, if not a species of, *Pletia*, in growth like the old *B. Tankervillæ*, (I forget the more modern name) [Phaius.—Ed.], only more beautiful than that old favorite.

In passing the other day a small garden in an obscure situation, I saw growing a row of young plants of Indian Corn, with leaves distinctly striped with white. Of course I made a note of it, to procure seeds at the proper season. Who knows but what, after a while, the vegetable gardener may invite you to look at his gold-blotched Cabbages, his tri-colored Lettuce, silver-margined Squashes, or striped Cucumbers?

The past winter has been exceedingly dry, and somewhat colder than usual. The spring, too, has been more backward, but seasonable rains came on in time for the wheat and barley crops. The harvesting of the last is nearly over, and that of the wheat will soon commence. Farmers are now also busy transplanting rice from the seed beds to the paddy fields. This work, although not laborious, would, to those not accustomed to it, be exceedingly unpleasant, as those who perform it have to wade all day long knee deep in water. It is chiefly done by women and boys, the men performing the severer labor of preparing the fields for the reception of the plant. Mr. Veitch says the transplanting is done in April. He probably refers to sowing the seed in nursery beds.

Immediately after the grain crops are harvested, no time is lost in sowing Cotton, Sesamum, Buckwheat, and Sweet Potatoes. Their system of liquid manuring enables them to plant at once, without any further preparation of the soil than simply opening the drills for the reception of the seed. They practice sowing seed very thickly—I should think twice as much as is necessary, the surplus being just so much grain lost. Millet and Maize are both transplanted, but neither to the extent to entitle them to the name of a field crop. Potatoes are in blossom, and are now looking finely. The late rains will aid them very much in producing a large crop, which will be wanted to help feed the small army of foreign soldiers now gathering here for the purpose of reconciling the Japanese government to the inevitable change that must take place in their policy towards other nations, or, in other words, bayonet reconciliation. Not the least consideration with myself is, that in the end freer access will be permitted to other portion of the country.

I am, Yours, &c.

T. H.

WILD FLOWERS.

BY THOMAS GARDNER,

[Continued from page 269.]

The *Solanum* family includes the Jamestown weed (*Stramonium*), pretty enough if it were not so very common. The potato, egg-plant, ground-cherry, capsicum, pepper, tobacco, and other well known things, all belong to this family, so that it is at least useful, if not as ornamental as others. The *Gentian* family has many very pretty representatives. The *Subbatia* and *Erythraea*, or American Centaureas, fifteen species at least, are all pretty; the true Gentians, mostly blooming just before frost with various shades of blue, and are pretty also.

The Milkweed family (*Asclepiadaceae*) is a class of plants remarkable for the peculiarity of the structure as well as the beauty of the flowers of most of them. The common Milkweed or wild cotton is well known by the cottony down that envelops the seed, as in the true cotton. It wants, however, the barbate property which gives the cohering power to the true cotton, and is therefore useless for any similar economic purpose. The most common kind is the *Asclepias cornuti*. The handsomest kind is the 'Butterfly Weed,' (*A. tuberosa*). This has bright, orange-colored flowers that are universally admired. *A. variegata* is a beautiful white, with rather large flowers, and a less coarse growth than some of the others. *A. nivea* is still prettier, but is rather rare, even south, where it seems most at home. Of the purple varieties, *A. purpurascens* is the purple Milkweed, so showy in almost every piece of uncultivated, wet ground in the fall. The *A. rubra* grows in very wet bogs, and is also a pretty purple. The *A. Michauxii* is a Georgia species, not very pretty, but very fragrant. These are the best, but all the Milkweeds, about twenty species, are more or less attractive.

We now come to a part of the herbarium which embraces plants that are mostly trees and shrubs, such as oaks, willows, poplars, that are not within our scope just now; or docks, sorrels, or spinages, that have no beauty or interest to our subject, until we reach the curious *Orchid* family. This consists of those curious flowers that often look more like butterflies, bees, or other insects, than real living flowers. They are so uncertain in their appearance, and seem to have so little affection for the cultivator of the soil, that we know of few so well known that we can refer to one and say this may be taken as the type of the family. Perhaps the '*Ladies' Tresses*' is the most common kind. This is the

white-flowered plant, common in meadows in the fall, that has its flowers arranged, like the thread of an auger, spirally along its dark green stem. Botanists call it *Spiranthes tortilis*. It may give some kind of an idea of what an orchid is like, but affords none of the rare beauty possessed by most kinds. The '*Ladies' Slipper*,' or *Cypripedium*, is perhaps the handsomest genus of orchideæ, but they are rather scarce. There are about fifty species, natives of the Union, any one of which will attract the attention of the student in search of beautiful wild-flowers. Of the bulbous-rooted plants, or plants of allied sections, we have many very pretty ones. In the *Amarylis* family is the Atamaseo lily of North Carolina, bearing pretty, rosy purple cups. The Star grass (*Hypoxis*), has yellow, star-like flowers, and is common in northern woods early in spring. Of the *Iris*, or Flower-de-Luce family, we have to name several interesting kinds. The *Iris Virginica* is quite as pretty as the Persian *Iris*, of which thousands are annually imported from abroad. It is of a beautiful blue. The most common blue Flag, however, is the *I. versicolor*; this is a coarser and more water-loving plant than the Virginian. Another very pretty one is the Six-angled *Iris* of Georgia, of which we see blue, yellow, and white varieties. The '*Copper Iris*' (*I. cuprea*) is also a Georgian, and one of the best of the family. There are also two small growing kinds, but quite attractive—one, *I. cristata*, grows in pine barrens in North Carolina; and the other, *I. vernata*, flowers very early, and is a beautiful object on the Kentucky and Tennessee hills. The '*Blue Eye*,' or Bermuda grass (*Sisyrinchium*) is a very common plant in every damp meadow; an allied, but much prettier, thing is the *Nemastylis gemmiflora* of Missouri and the west, with flowers four times the size, but as dark a blue as the common Bermuda grass.

[To be continued.]

NEVER crowd your plants in or out of doors. Half the plants under glass are spoiled by this alone, and three parts of the nursery stock is ugly from that cause also.

Never allow the surface of the soil in a pot or in the ground to be long without stirring, unless it be naturally very open, as is the case with peat earth.

Keep all kinds of plants under glass as close as possible to the light: there is no exception, unless it be some orchidaceous plants.

The Gardener's Monthly.

PHILADELPHIA, OCTOBER, 1864.

✉ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOP, Box Philadelphia."

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INDIVIDUAL BEAUTY OF TREES. AND EFFECTS OF MASSING IN LANDSCAPE GARDENING.

There are two classes among tree planters whose views are so antagonistic that it is not easy for an intelligent Landscape Gardener to satisfy both.

The one delights in the individual tree. Its gracefulness or elegance; its grandeur or magnificence; its beauty of form or foliage; the fragrance or richness of its flowers; constitute the one great idea with him. All other beauties are subordinate to this. Give him a perfect specimen of a beautiful tree, and his horticultural soul desires no other heaven.

The other class sees things through an artistic eye. It wants order and harmony,—abhors angles and sharp points,—revels in delicacies of light and shade,—feels the contrasts of colors, and the regular gradation of tints, and finds greater pleasure in them than in any other features of the best kept gardens.

There is the same distinction between these two classes as there is between nature and art. If "art is but nature better understood," so the tree lover is the first rudiment of the perfect Landscape Gardener. He is the chrysalis from which someday is to emerge the butterfly,—astonishing itself by its new born beauty.

As no entomologist would consider his knowledge ended with the study of the insect in the imago state; so neither should the Landscape Gardener, in his search for first principles, ignore the claims of both classes of planters in their race for the beautiful. Very often both may be satisfied. Grounds may be so laid out as to have something the character of an arboretum, and yet in its main features do no injustice to the higher efforts of the Landscape artist.

In small places, the individual beauty of trees will always be the chief attraction. The first care in them should therefore be to provide a few very

handsome specimens as striking objects of beauty. The artistic efforts will exert themselves on the judicious arrangement of shrubbery; divisions and subdivisions of the grounds by hedges; and in the introduction of walks, and locating seats, fountains, statuary or vases.

In larger places, trees may be massed together with great skill. No single tree would ever give the noble effect of a large mass in park scenery. The lover of the beautiful single tree may protest against the barbarity of the thing; but specimens must be thickly crowded together to make it look ever as you want it, even were the most Methusallistic life allowed.

But our chief point is to call the attention of Landscape Gardeners to the importance of varying their styles to suit the various grades of garden admirers. Their great fault is too great an uniformity of style. As one rides through the country, wherever we may go, we can tell at a glance what Landscape Gardener has journeyed that way before. This is the work of D., that of S., the other of M. Paley never adduced more clearly to his own satisfaction from his watch argument, the designer from the design, than one can from these gardens the hands who were their framers. The same style pervades their whole works. When we have seen one place, we have seen all they can do,—whatever else we may see is but a slight modification of gardens already seen.

There is no question but that on him whose heart is attracted by individual specimens of beauty, straight walks and lines in a garden have a more telling effect than the opposite or curved style of gardening. It is, indeed, very hard to make a garden in the highest style of art without straight lines. The straight lines seems to us the boundary between nature and art; and it is only by a judicious employment of both, that the true garden artist is made. When properly arranged, by massing, and curving, and anticipating shadows, one can make a place look much larger than it really is, and obtain some magnificent effects; but it is not wise to sacrifice every other garden enjoyment to obtain these advantages, however in themselves desirable they may be.

Just as in the modern style of massing bedding plants together, for the mere sake of the gaudy effect they produce, the result is the abandonment of the cultivation of the hundreds of beautiful hardy herbaceous plants that were formerly grown, and the consequent loss of innumerable sources of individual gratification,—so has the massing style of planting interfered with the gratifications of the

lover of fine trees and shrubs. There is no reason why it should be so. The Landscape Gardener has but to relax a little of the principles of his school, and by adopting an eclectic philosophy, that takes up a good idea for imitation wherever he finds it, he can find room in his designs for all.

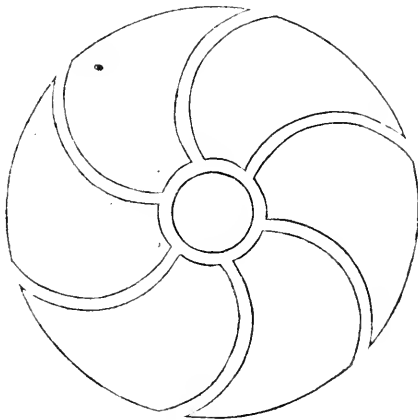
The few connoisseurs in the several styles will not be so well pleased by the mixture of lines; but we are sure the popular verdict would be in favor of such gardens, and certainly the sources of interest to the proprietor would be much greater than they now are.

The only objection we see, is that a man to design such a garden would have to be well acquainted with trees and shrubs, and their effects in different positions and situations. The occupation of the mere picture painter, with his pretensions to the profession of Landscape Gardener, would most certainly be 'gone;' but we do not know that the best interests of the art would suffer much thereby.

PLAN OF A FLOWER GARDEN.

In a recent number we gave a plan of a flower garden, taken from the grounds of Colonel Vernon Harcourt, at Ryde, in the Isle of Wight, England, with the promise of more from the same source at some future time. We now give another very pretty design which was also taken twenty years ago from the same place:

The following description he hands us with his sketch:



The beds altogether form a circle forty feet in diameter, and is raised so as to be about eighteen inches higher in the centre than at the circumference. The central circular bed is principally occupied by an ornamental base, on which stands a sun dial. The centers of the six beds are also raised a

little, and taper off on each side to the walks which are quite narrow,—not over two feet wide. An edging is formed by blue slate, neatly fitted and projecting about one inch above the soil in the beds and the surface of the walks. The walks themselves were paved with cobble stones, about the size of hen's eggs. The flowers noted as growing in the beds at that time were *Verbena incisa*, pink; *V. sulphurea*, yellow; *V. Tweediana*, scarlet; *V. teuroides*, white,—about all the Verbenas they had at that day; *Anagallis Philippii*, blue; and *Neir-embergia intermedia*, pink like a Petunia.

This must have been about the time of the first introduction of the system of growing plants in masses for effect; and no doubt the arrangement must have been something of a curiosity in its way.

APPLE ORCHARDS IN NEGLECTED GROUNDS.

One of our contemporaries, which, from its frequent reference to trees in "neglected grounds," we judge prides itself on its advocacy of keeping the surface of apple orchards continually stirred, in opposition to the views of the *Gardener's Monthly*, concludes a recent article thus:

"There is no doubt that if the grass in an orchard were kept closely grazed, with an occasional top-dressing of manure applied in autumn, and a sowing of lime or ashes at the rate of fifty bushels or more per acre, it would have an excellent effect, and in some measure compensate for the want of a pulverized surface. Fertile portions of the West may grow orchards to the best advantage in this way. Cultivators must modify their treatment with circumstances; if, for example, (as we stated on a former occasion), the annual shoots are not a foot in length, the owner may be sure that the trees need higher culture. If, on the other hand, the growth exceeds a foot and a half or two feet in a bearing orchard, we may be satisfied with its vigor, and take no farther pains to increase it as long as this state of vigor continues."

This is precisely the position we assume, and in as nearly our own language as one blackberry is like unto another one. All the difference we can see is that our friend limits his views of the "best advantage" of the system to the "fertile portions of the west," while we recommend it for fertile soils any where. If the soil be naturally poor we should make it fertile. It is just as easy to make a tree grow as we want it by top-dressing as by any other way; and we believe more healthy, and with a greater profit to the orchardist than by any other mode of treatment whatever.

The attempt to fasten on those who oppose continued plowing, the idea that they are in favor of "neglected orchards, or in grass," as if the two terms were mere synonyms; or as if there were no particular mode of growing 'grass' in orchards recommended but the common 'skinning' culture so common with farmers, is ungenerous.

An orchard can be ruined by grass, just as readily as by injudicious stirring; while it is easy enough to point to very successful instances of cleanly cultivated grounds. There need be no difference of opinion on this point. The argument is whether a well managed (not a neglected) orchard in grass is not more profitable, either immediately or through a long term, than a well managed one under cultivated crops, or any other style of clean surface?

We are always ready for this question, as it is an important one to intelligent orchardists. Whether it is worth while to grow trees "in neglected ground, or in grass," simply and without modification, need only be discussed where the *Gardener's Monthly* does not circulate.

Scrap and Queries.

☞ Communications for this department must reach the Editor on or before the 10th of the month.

☞ The Editor cannot answer letters for this department privately.

MANURING STRAWBERRIES—*S., Princeton, N.J.*—"I find a great difference existing between practical men in reference to manuring strawberries. Some advocating the advantage, others opposing it as hurtful. What is your opinion?"

[Both are right under certain conditions. There is no rule that will apply to all circumstances. In cultivating the strawberry the object is an *abundance of fine fruit*. Without moderately healthy and vigorous foliage, there will be little superior fruit; and yet leaf growth can be so stimulated as to ruin the fruit crop; just as overbearing will on the other hand often injure the leaf producing capacity, and thus weaken or even kill the plant. If you have a variety that naturally produces vigorous foliage, at the expense of the fruit, leaf producing manures (nitrogenous) make the matter worse. Heavy bearing kinds take more of this kind of manure. Fertilizers of a more mineral character help the fruit-producing principle, when that requires encouragement. You see the difficulty of laying down a rule; but the trouble does not end here. Besides the nature of the soil itself, learned

Agriculturists themselves find they have yet all to learn in the application of manures.

It is really astonishing, concludes LIEBIG, in a recent paper, that men of experience can be made to believe that because a manure has produced on certain land a high return, it should produce an equal effect, or possess an equal value, on all other lands; for if the efficacy of a manure, A, be believed to depend on the presence and quantity of the manures B, C, D, etc., it must for such a result to follow, be assumed that all the land in a country contains the same quantity of B, C, D, etc., whereas it is indisputable that there are scarcely two fields of the same country, often not two fields on the same estate, which possess the same identical geological, chemical, or mechanical character, and consequently the quantity of the manures B, C, D, must vary in each instance. It must be plain, therefore, that a given 'quantity of manure A, be it ammonia, phosphoric acid, or potash, must necessarily have quite a different operation in proportion as the land may be differently constituted. Even stable dung, which contains all the nutritive elements in conjunction, produces different effects when applied in the same quantity to different fields." Thus it follows "as a corollary, from the law of equality of nutritive value belonging to the constituents of food, that the elements which are either wanting in the soil, or are contained in it in insufficient quantity, are those which will prove of preponderating value in the manures applied."

All we can advise is to find from practical observation in your own neighborhood, what variety of strawberry is best adapted to your soil,—dig the soil deeply (18 inches) and plant. If the strawberry plants do not grow well, then top dress the next season with well-decayed stable manure. If the soil is naturally poor, so that no vegetation is vigorous in it, there will probably be an advantage in manuring at the start,—otherwise not.

GRAPE MARMALADE—"Vitis," *Leominster, Mass.*—"Can you give me a recipe for making marmalade from grapes? If you cannot, will not your correspondent Mr. Oliver Taylor, furnish one for making such as he mentions in his article in the February number of the *Monthly*?"

[Grape marmalade is made by skinning and stoning the grapes, and boiling the pulp over a slow fire, occasionally stirring it, until it has arrived at the consistency desired. We are unable to give our correspondent a more exact recipe, and should be obliged by our friend Oliver Taylor, or other friends

giving us one.

We should be particularly glad to hear from Oliver Taylor,—strict non-combatant as he is, we are afraid the war in his home in the Loudon Valley, of Virginia, has been too much for him. Several letters we have sent him the past year being yet unanswered, we fear it is out of his power for a little while longer to write to us.]

ANNOYANCES OF CORRESPONDENTS.—There is no position that we assume in life entirely free from annoyances. If our moral nature is so warped as to lead us oppose the best interests of society, trouble meets us at every step,—and when higher and purer motives induce us to work for the good of others, we find severe temptations beset us to make us abandon our goodly work. It requires the courage of a brute to persevere when the whole moral sense of the community opposes; but the man of a high order of sentiment falls back on his own determination to work on the more as his intentions are suspected and his motives misconstrued.

These were our reflections as we read the following note addressed to our respected correspondent J. P. Norris, of West Chester, who sends it to us for preservation as among the “curiosities of literature:”

HAMILTON, C. W., Sept. 7th, 1864.

J. P. NORRIS, ESQ.—Dear Sir: I enclose you One Dollar for a plant, of I see you advertise in the *Gardener's Monthly* for August.

One plant of the Night-blooming Cereus. Send it by mail to my address.”

We suppress the writer's name, as we are quite sure he must have written thoughtlessly, or with some mistaken recollection of what he had read when he wrote.

Mr. J. P. Norris is a highly educated and intelligent gentleman, one of our most valued correspondents,—one who enjoys his *otium cum dignitate*, in the rational pursuits of country life,—who has nothing to sell, and who would scorn moreover to advertise his wares in so mean a way if he had any thing to sell.

We cannot imagine what there is in the article to suggest such an idea, and this it is which leads us to the charitable conclusion that the letter was written under some mistaken recollection.

On entering on our own literary career, one of first ventures was an essay on “Anonymous Writing,” and we have applauded those editors who would insert nothing but what had the writer's name and address in full; but for some years past we have modified our views, from experience that

it cut off from the public the aid of some of our best writers, whose sensitive and gentle natures unfit them for battling with an uncharitable world. As a guarantee to our readers, we have trusted rather to our own acumen in detecting ‘snakes’ concealed under communications; or in dulling the edge of ‘axes’ some people would rather have us grind, than to the names of the writers; and when we express our conviction that no magazine was ever favored with so large a body of disinterested articles of so valuable a character, as those we have published in our short six year's existence, we need scarcely add, also, that we are well satisfied with our own rule in the matter.

The writer's name to an article, however, is always an additional guarantee to its value,—and it is to be regretted that thoughtless individuals should act so as to render the anonymous system in any degree commendable.

PRONUNCIATION OF GLADIOLUS.—A correspondent writes:

“Why not call attention to the universal error in the pronunciation of the word *Gladiolus*. All say *Gladiolus*; of course it should be *Gladiolus*. It is a diminutive from the Latin *Gladius*, a sword. All diminutives in “olus,” with a few exceptions, shorten the penult—*vide* Latin Grammar. The true pronunciation, when one becomes accustomed to it, is far more euphonious.”

[There has been a prolonged discussion in the English journals regarding the proper pronunciation of this word. Our correspondent gives the correct *classical* pronunciation; but is an open question for all, whether, when we adopt another word, as a word of our own language, we may not vary its pronunciation to suit the genius of the language into which it is received.

These changes are being continually made. For instance, a Frenchman with a name of half a score of vowels pronounces it as if of one or two syllables. A Botanist, naming a plant to his honor, latinizes his name, and makes it botanical. It ceases at once its French style of pronunciation. It follows the Latin rule, and every vowel is sounded.

‘Monsieur’ may settle in the midst of the English language, but, in spite of his rules, he comes down in time to plain Mister; his *Paree* becomes Paris; and his neighbors ‘gone’ (Gand) simply Ghent. When we say ‘The *Gladiolus*,’ we speak of a tribe of plants as with an English name. It has no other common name but that. We render it in the plural in the regular English way, ‘*Gladioluses*,’ No one uses it in its scientific sense, and

asks you to see his '*Gladioli*.' *Gladiolus* is as our correspondent says, charming enough; but can we say the same of *Gladioluses*? and to say *Gladioli* for plain English, would, we fear, be considered an unpardonable affectation.

In fine, were we delivering a Latin oration, we should unhesitatingly adopt *Gladiolus*; but in every day English, as the pronunciation as changed has become universally adopted, we fear we should offend classic rules, and say *Gladiolus*—as if written and pronounced Gladdy-olus.]

DIMORPHISM—*F. K. P., Bloomington, Ill.*—

"The enclosed were plucked from Native Seedling plants here, by myself. To what genus would you refer that plant. Some say *Thuja* and some *Juniperus*. Hope to hear through the *Monthly*."

[The specimen sent belongs to *Thuja occidentalis*. *Juniperus*, however, in common with all *Coniferae*, are subject to this dimorphism, or double form of foliage. The law governing each kind of form is not understood, and might be made the subject of interesting study. Usually—especially in *Thuja*, *Juniperus*, and *Thujopsis*, the two forms of foliage seem connected with the seedling state. *Juniperus chinensis*, particularly, preserving the double form for some years after the germination of the seed. As growing seedlings are generally supposed to be more vigorous than when older, it might be connected in some way with vigor; but this theory is refuted by the fact that cuttings of *Thujopsis borealis* produce the two forms of growth, almost as freely as seedlings. *Thuja* or *Biota pendula* is a seedling of the Chinese *Arboretum*, and is an instance where the least frequent state of dimorphism has maintained itself exclusively in the plant.]

THE CURRANT WORM—*M. B. B.*—This pest of the Western States must not be confounded with the Currant borer, which is an Hemipterous insect, and entirely harmless to the leaves of the plant, so far as we know. We are not sure of which evil you complain. If of the former, slacked lime sifted over them when infecting the leaves is the best thing to be done. If the latter, examine the shoots in early winter, and any that are punctured (which indicates larvæ within), cut off the shoots and burn them. Every one seems to write much of the borer, but to our mind it is much more destructive to ones hopes of a good crop than the leaf worm or caterpillar.

HONEY LOCUST AS A HEDGE PLANT—*R. S., Rockford, Ill.*—"I have some idea of planting a

hedge of this in the absence of Osage Orange, this fall, but am told it is failure; please give me your opinion through the *Monthly*."

[It is one of the best of hedge plants. It is very thorny, grows rapidly, and when judiciously pruned in June and September, as Osage Orange, and all tree-growing hedge plants must be, it is as close and compact a hedge as need be.

When properly kept under by pruning, the roots do not extend far, as the roots of trees extend only "proportionately to their branches."

It has in fact one advantage over Osage Orange: it will grow and do well where that plant will starve.

GRAPE-VINES MILDEWING—"Long Island Subscriber."—"It has been asserted that the Concord will not mildew; mine mildewed this year as badly as any. How is this elsewhere; or is my position unfortunate?"

[There is no reason that we know why it is impossible any grape should mildew. This has been peculiarly an unfavorable grape season. We have not seen any kind escape. We however give the Concord this credit, that while most kinds have suffered dreadfully by mildew, the Concord, though equally attacked, suffered less by a long way than most others. Indeed, with the exception of Taylor's Bullit, Clinton and Concord, all suffered materially.]

BORDERS FOR COLD GRAPERIES—*M., Catawissa, Pa.*—If your land is 'high and dry,' drains will not be necessary, for your border need not be an expensive one before erecting a grapery,—say one-fourth washed or turnpike sand, three-fourths two or three inches thick of the surface of an old pasture, and about one-fourth in proportion of the other two ingredients together, filled into a space of ground about fifteen feet wide in front of your grapery, and about 18 inches thick—on the old surface for that matter, will grow very good grapes.

THE MARSH MALLOW.—It is difficult to account for the origin of names. How the 'Marsh Mallow, that never grows in marshes,' came by the name, it is not easy to decide. Some of the species are famous all over the world for beneficent purposes, and hence the popular mind as usual connects it in its popular name with the Author of all good. The Spaniards, for instance, call one species *Bencas de Deos*, 'Gift of God,'—and another one is called by the Turks *Masallah*, 'God's plant,' and this latter is perhaps the real origin of Marsh Mallow, and not that the plant should grow in marshes.

CEMENT TANKS—Fox Meadow.—We had closed up our column of "contributions" before starting for Rochester, and on our return found a highly interesting letter from our correspondent on this topic. Too late for our proper division, and as the subject is of immediate interest to our readers, we condense the article for a small space still at our disposal in this department.

In reply to an enquiry, Mr. Hooker informs our correspondent that his tank is made of what is known in Rochester as 'water lime,' which, as we recently found, is a variety of what is known in the rest of the Union as Rosendale cement, brown cement, and so on; distinguished from common mortar lime by its brown color.

"Fox Meadow" replies to Mr. Hooker, he understood the patent to be for a new hot-water-proof cement; but as it is for merely combining boards and cement together to make a tank, he protests against the claim of Mr. Hooker's right exclusively to use them, and at the same time insists that they are worthless, through certainty to crack, and unable to heat a house if sunk in the ground, if they remained perfect.

In the contribution to the *Gardener's Monthly*, accompanying the above papers, "Fox Meadow" shows Mr. H.'s claim to a patent to be null and void, asserting that tanks of board, zinc, bricks, and many other materials, lined with cement of every character, and sunk in, placed on, and supported above the soil, have often been tried in every conceivable way by others. He refers to the ambiguity resulting from Mr. Hooker's indifferent use of the terms 'mortar,' 'good mortar,' 'cement,' 'water lime,' 'hydraulic cement,' etc., as likely to lead people astray; and suggests that Mr. Hooker might furnish the good lime to the constructors, and then warrant the tanks with water at 200°, which he thinks would be satisfactory. We give entire the concluding part of our friend's communication:

"Perhaps Mr. Hooker has not kept a record of the highest temperature he obtained in the water of this tank, worked by a \$45 boiler,—one of the smallest made by Weathered & Cherevoy of N. Y.

Mr. Hooker's tank, as far as we are able to learn, is from 4 to 6 inches deep, and 3 feet 9 inches wide, and averaging about 150 feet in length. This will contain some 900 gallons of water. The next question that presents itself is, To what temperature this small \$45 boiler in question can possibly heat this quantity of water? We will answer this by stating a fact in our every day experience. A 100 feet of 4 inch calibre cast-iron pipe contains about

50 gallons of water; we have in two houses something over 600 feet of pipe in each; consequently, the pipes in each of these houses contain about 300 gallons of water. Now I have the largest boilers made in New York, (and I believe the best) placed to work each house separately; but when Zero comes, and with him the driving howling storms of winter, we find we have enough to do to maintain 190° in the water—the *security* for 70° or 75° around our tender grapes. I wonder how wooden boxes filled with water would suit, running through the houses instead of cast-iron pipes?"

Books, Catalogues, &c.

POPULAR NAMES OF BRITISH PLANTS. By R. C. A. Prior, M.D. Williams & Norgate, 1863, 8vo., Pp. 250.

It is curious to observe, how the information derived from one department of human learning dovetails into that which another supplies, till the two in conjunction put us on a vantage ground, from which light may be thrown upon some perfectly new, and perhaps difficult branch of study. These thoughts are suggested by the very interesting work before us, in which the author brings his ample store of botanical knowledge and the results of deep research into the northern and other languages, to bear, not merely on botany and philology, as one would expect, but actually tries to elucidate by their means, curious and difficult questions, such as the early civilization of our forefathers, and the route which they must have followed, in travelling from the East.

We are all familiar with the fact, that the names of the animals tended and fed by our Saxon ancestors in England, the ox, calf, sheep, etc., are known to this day by their Saxon designations, while the flesh of the same animals, considered in its quality of food, under which character only the Norman conquerors cared to know it, still goes by the French or Norman names of beef, veal, and mutton. This single fact would prove a Norman conquest, even if there were no existing document whatever giving an account of it. Dr. Prior's mode of reasoning is something of this kind, and we take the word Apple as a good example.

"In all the Celtic and Slavonian languages the word is, with allowance for dialect, the same. This similarity, or we may say identity, of name, among alien nations would lead us to believe that it was brought with the tree from some one country, and

that no doubt an Eastern one; and that the garden Apple is not, as it is often supposed to be, merely an improved Crab, but rather the Crab a degenerate apple. This apparently is the only fruit with which our ancestors were acquainted before they came into Europe; for, with the exception of a few wild berries and the Hazel-nut, it is the only one for which we have a name that is not derived from the Latin or French. It seems to have accompanied them on a northern route from the western spur of the Himalayan mountains, a district extending through Ancient Bactria, Northern Persia, and Asia Minor, to the Caucasus, and one from which we have obtained, through the Mediterranean countries, and within the historical period, the Peach, Apricot, Plum, Damson, Cherry, Filbert, Vine, and Walnut, and probably some of the cereal grains; a district in which there is reason to think that our portion of the human race first attained to civilization, and whence it spread, with its domestic animals and plants, to the south-east and north-west. The meaning of the word is unknown, but as *ap* is, in Zend and Sanskrit, 'water,' and *p'hala* 'fruit,' we might be tempted to believe that it originally meant 'water-fruit,' or 'juice-fruit,' with which the Latin *pomum*, from *po*, to drink, exactly tallies. The remarkable coincidences of name, to which allusion has been made, are due to the intimated connection with each other of all the Indo-European nations and their languages, from their having grown up in the same nursery together in Upper Asia, and dispersed subsequently to their becoming acquainted with this fruit, and not to a mutual borrowing of it since their settlement in Europe."

Again, Dr. Prior proves that the tribes which descended upon Britain, had entered Europe, not as a set of savages, wandering pastoral tribes, or mere pirates and warriors, but as colonists, who, though rude in dress and manners, yet in essential points were already a civilized people. Further, they must have come from a colder country, for, while the names of their trees comprehend the Oak, Beech, Birch, Hawthorn, and Sloe, trees that extend far into Asia, they do not comprise the Elm, Chestnut, Maple, Walnut, Sycamore, Holly, or any evergreen except some of the Fir tribe, or Plum, Pear, Peach and Cherry, or any other fruit tree except Apple. The fact of their adopting Latin names for all these trees, shows at once that when first they came in contact with the Roman provincials on the Lower Rhine, they were foreigners, newly arrived as colonists or conquerors, from a country where these trees were unknown. In

fact, they came from their home in the East with a knowledge of letters, and the useful metals, and with nearly all the domestic animals; cultivated Oats, Barley, Wheat, Rye and Beans; built houses of timber and thatched them, and actually hedged their fields and fenced their gardens.

The romantic reader will be sorry to find that 'our Sweet Alisons and Herb Trueloves, our Hearteases, Sweet Cicelies, and Sweet Williams resolve themselves into sadly matter-of-fact terms, which arose from causes very different from the pretty thoughts with which they are now associated, and sometimes, as in the case of the Forget-me-not, were suggestive of very disagreeable qualities. Many we shall find to have been given them in accordance with the so-called doctrine of signatures. This was a system for discovering the medicinal uses of a plant from something in its external appearance, that resembled the disease it would cure; and proceeded upon the belief that God had in this manner indicated its especial virtues. Thus the hard stony seeds of the Gromwell must be good for gravel, and the knotty tubers of *Scrophularia* for scrofulous glands; while the scaly pappus of *Scabiosa* showed it to be a specific in leprous diseases."

Besides the etymology of the names, taken by themselves, Dr. Prior says the question is ever arising, why they should have been affixed to certain plants. Here the fanciful notions of writers must generally be accepted with reserve. Synonyms in foreign languages, though useful, are not very trustworthy; for authors, mistaking the sense of some unusual or obsolete word, often mistranslate it into another; so that it is quite impossible to reconcile what is said of certain plants by Greek and Latin writers. At home we find the Scotchman's 'Bluebell,' which he celebrates in song, a totally different flower from the English Bluebell. This vague way of applying the same name to very different plants causes endless confusion. Who would dream that the Privet has obtained a name indicative of early spring, from having been confused under '*Ligustrum*' with the Primrose? or that the Primrose has borrowed its name from the Daisy?

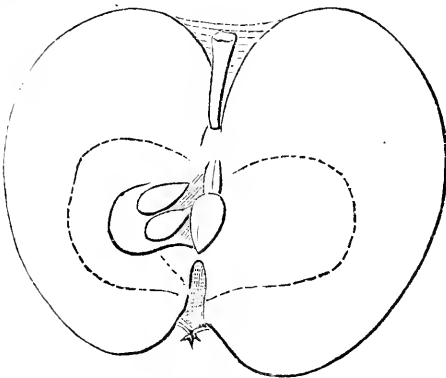
Under the word Beech we learn that in northern languages the word book and Beech-tree are identical, except in gender. Thence, by comparison with the Sanskrit, we deduce that the introduction of alphabetic signs from the East was by a northern route, and not from the Mediterranean. For had we learnt them from Greeks or Romans, we should have adopted their names for book and writing materials. The Greeks take their *Biblos* from the name of an Egyptian plant, showing that book

writing was a foreign art, and that they had left the parent stock before its invention. The Germans still retain the word *buch-stab* (beech-stave) in the sense of a letter of the alphabet, the tree and its wood having taken their name and use in writing from northern nations.—*Gard. Chronicle*.

New and Rare Fruits.

ALL-SUMMER APPLE.—"I send you a couple of apples, of a variety not so well known as I think it should be, introduced a few years since by Casper Miller, of Conestoga Centre, Lancaster Co., Pa. He named it (All-summer) from the fact of its being in use from the 20th of June till September. A handsome grower, regular bearer, not failing here in five years, of its quality and appearance you can judge. These are average specimens that I send. The trees commence bearing in the nursery. I have counted seven apples on a four year old tree, which was growing as thrifflily as the others around it that had none on. To save others trouble I will state that I have no trees for sale.—S. MILLER, *Acon, Lebanon Co., Pa.*

[As the apple is a very distinct variety, we have made the following outline of the smallest sent by Mr. Miller, of which we have taken the description annexed :



Fruit small to medium, nearly round; skin greenish white, very clear, pale blush tinge on the sunny side; stalk half an inch long, deeply imbedded; calyx small, closed, set in a deep regular basin; flesh very white, delicate, crisp, juicy, with a pleasant vinous but not high flavor. Season from June to September.

MEAD'S SEEDLING STRAWBERRY.—This is one of several seedlings raised by Mr. P. B. Mead,

some years ago. It is of large size, berries six and seven inches in circumference being not uncommon with good culture. It is conical in shape, with a white, juicy, sweet flesh, and a decided pineapple flavor. It is perfumed. The color is a peculiar brilliant scarlet. The surface is glossy and polished like a mirror. It will not bear a crop like the Russell, Wilson, and some others; but it is productive variety. Its sexual character is nearly pistillate. It is a hybrid, being a cross between the Pine and the Scarlet.

ROGERS' No. 15 GRAPE.—We have permission to publish the following, which, as every thing relating to grapes has a peculiar interest just now, will be acceptable to our readers:

MESSRS. WILDER & BAKER—Gents: One of the Rogers' Hybrid Grapes, which I purchased of you in the spring of 1864, has fruited a few bunches this season—now ripening. It is No. 15. It is the finest grape I have tasted this season—better because larger and more productive, and equal in quality to the Delaware.

I have also a No. 4, of three year's growth, in pretty full bearing, and that is a better grape than any others except Delaware. My vines were covered a little with straw last winter, and I did not lose one.

I shall take up a quantity of Isabellas and Catawbas—Concords and Clintons—to make room for the hybrids this fall and next spring. All the vines which I had of you have made good growth except two, and these not well set.

Catawbas in our vineyard have rotted (Black Rot), but not so as to injure the crop generally.

We shall make a good deal of wine this season in this vicinity. No. 4 is very vinous. Why will it not make wine? How much saccharine has it?—*E. G. JOHNSON, Peoria, Ill.*

NEW HOTHOUSE GRAPE:—*Hovey's Magazine* notices a new grape, produced by M. H. Simpson, of Saxonville, as follows:

"The new grape, which we now briefly notice, but which we hope to offer a more complete account of by Mr. Simpson himself, was exhibited last year before the Fruit Committee of the Massachusetts Horticultural Society, and commended for the peculiarity of being free from seeds. By the kindness of Mr. Simpson, we have now before us a beautiful cluster of this new grape, and a full taste of it increases our appreciation of its excellence. The bunch is not large, and the berry only of medium size; but the cluster is full and even,

and the berries uniform in appearance, not unevenly sized, as they are in grapes which do not set, and which do not swell up only such berries as have seeds. The color is jet black, with a fine bloom, and the flavor sprightly, rich and delicious. As a show grape it will not, of course, hold a high place, but for quality; and especially for the use of invalids, the absence of seeds renders it highly valuable. The skin is thin, and every thing can be eaten. Amateurs of the grape, who do not care for show, will, we think, deem Mr. Simpson's grape a fine addition to their collections."

NEW FOREIGN STRAWBERRIES.—*The Royal Hautbois.*—Through the kindness of the Rev. W. F. Radclyffe, of Rushton, we have received a basket of the fruit of 'River's Royal Hautbois,' which, notwithstanding the distance travelled, came in excellent condition. This is by far the best variety of the Hautbois we have ever seen. It is the largest in size and the most abundant bearer, and the flavor is superior to any other of the Hautbois. The color, like that of all other varieties, is partly purplish rose and partly pale yellowish; and the flavor, as a friend remarked, was "like Strawberries and cream."

Mr. DE JONGHE, of Brussels, has sent us specimens of two new Strawberries, which we think will prove useful additions to those already in cultivation, if it were for no other property than that of bearing a long journey without injury. In both of these the flesh is so firm and solid that the condition in which we received them was most excellent, and the flavor was not in the least destroyed:

Bijou.—This is evidently of the same race as that other excellent variety raised by Mr. De Jonghe called *La Constante*. The stalks of the leaves and fruit are short and stout, clothed with spreading hairs. The blade of the leaves is of a glaucous green beneath, and a clear shining dark green above. Flowers small. Fruit not so large as *La Constante*, from which it was raised, ovate or conical, regularly formed, and having large seeds, which are level with or rather prominent on the surface. The skin is of a clear, varnished cherry-red, well colored all over the surface. Flesh firm and solid, white throughout, juicy, rich, and with a sprightly flavor.

This seems a very hardy variety, judging from the leaves and fruit that were received.

Souvenir.—This is apparently of more luxuriant growth than *Bijou* and *Constante*, but it has all the appearance of belonging to the same hardy race.

It is an immense bearer, and produces masses of noble fruit. The stalks of the leaves and fruit are clothed with spreading hairs; the leaves are broad, roundish, and deeply dentate, of a dark and somewhat shining green above.

The fruit is large, sometimes very large, varying from rounded ovate to long conical, and in some instances it is irregular and corrugated in shape. Seeds large and even with the surface. Skin of a uniform shining cherry-red color. Flesh white, firm, and solid, juicy, richly flavored, and with a fine pineapple aroma.

This is a very excellent Strawberry, and, in our opinion, surpasses all the other varieties raised by Mr. De Jonghe.—*London Cottage Gardener.*

New or Rare Plants.

NEW BEDDING GERANIUMS.—Mr. Wm. Paul exhibited several seedling Scarlet Pelargoniums of the Nosegay section, these seedlings being results of the perseverance of the late indefatigable and enthusiastic florist, Mr. D. Beaton. There is decided novelty in their color and style which will render them indispensable in every collection. They are but the fruits of careful hybridizing, and we may reasonably expect further progress. Some of these seedlings have much broader petals than the usual Nosegay section, such as *Stella*, *Merrimac*, etc., but that by no means gives a coarseness to the truss, although it would almost constitute an intermediate position between the broad-petalled section and the Nosegays:

Amy Hogg—Light rosy purple, very large, fine truss standing well above the foliage, which is slightly zonate. This variety is quite new and distinct in color; as a bedding plant it will be invaluable; it was the admiration of all who saw it—first class certificate.

Rebecca—Rosy scarlet, broad petals, fine truss, distinct and new in color; a most useful variety for bedding purposes—first class certificate.

Beauty of Waltham—Darker shade of color, fine flower, medium truss—second class certificate.

Glowworm—Quite a novelty, with bright scarlet upper petals, the lower deep carmine. The trusses of this seedling were thin. If this plant can be grown stronger it will not be surpassed by any other Nosegay.

Beaton's Indian Yellow—This, again, though quite novel in color, in its present state did not produce sufficiently large and compact trusses, the

essential qualification of this section of Pelargoniums.

Orange Nosegay—Had the same deficiency as the last two.

Some of these seedlings will doubtless be exhibited again, when they may present an improved appearance.—*Report of London Horticultural Society's Exhibition.*

BOUSSINGAULTIA GRACILIS.—A new species from Brazil, described by Mr. Miers, who remarks:

"The genus *Boussingaultia* was founded in 1825 by Kunth, on a plant from the Ecuador region, which was then described and figured by him; he placed it in *Chenopodeæ*, pointed out its affinity to *Basella* and *Anredera*. Subsequently the family of the *Basellaceæ* was established by Moquin Tandon, who placed *Boussingaultia* there, in his sub-order *Anredereæ*, according at the same time two other species from Mexico. All the plants of this family, comprised under six genera, belong to the New World, except those of the genus *Basella*, which is Asiatic. The discovery of a new species of *Boussingaultia* from Brazil is therefore interesting, for all the plants above mentioned are confined to the western side of the American continent. It is true that Tweedie sent a plant from Buenos Ayres, supposed to be cultivated, and which was referred to Kunth's type of the genus; but it was probably the plant now about to be described, which forms a fourth species of the genus." This new *Boussingaultia* bears long, very slender, and dense-flowered racemes, and was gathered by Mr. Weir in the province of S. Paulo.

[The description is very much like our *Madiera-vine* (*B. baselloides*), which we think is not known in England.—ED. G. M.]

DOUBLE-FLOWERED POTENTILLAS.—Raised by M. Lemoine, of Nancy, who has earned great reputation in the production of these flowers. They consist of: *Dr. Audry*, with enormous flowers of a deep orange with scarlet veins; *Louis Van Houtte*, very large velvety crimson-scarlet; *M. Naudin*, dwarf, with large crimson red flowers; *M. Rouillard*, large transparent vermilion; *V. Lemoine* with enormous incurved convex flowers, garnet colored shaded with vermilion, and bordered with yellow; *William Rollinson*, with large flowers of Indian yellow, bordered and shaded with very lively reddish orange.

BOUVARDIA LEIANTHA.—From M. Lemoine of Nancy. *Grandis*, carmine orange, with flowers three

times larger than the type; *floribunda*, with very abundant flowers in magnificent panicles, and larger than in other hybrids, of a cochineal rose during summer, and carmine orange in autumn; *splendida*, with the habit of the variety called Hogarth, and the fine color of *leiantha* itself.—*L'Hort. Francais.*

CLEMATIS FORTUNII AND STANDISHII.—These, perhaps, are the most magnificent of all Mr. Fortune's contributions from Japan.

WEIGELA HORTENSIS NIVEA is a name given by M. Von Siebold to a fine ornamental Japanese shrub, which he has introduced to the gardens of Europe. It is a plant of vigorous habit, and is described as having the leaves large and strongly veined, and the flowers very large, of a pure snowy white, retaining their purity during the whole time of flowering. Both this, and Mr. Fortune's white *Weigela*, will be valuable for the purpose of contrasting with the deeper-colored kinds already common in gardens.—*Gard. Chronicle.*

ARUNDO CONSPICUA.—A worthy rival of the Pampas Grass, flowering very freely three months earlier in the season than that old favorite.

A NEW VARIETY OF ATHYRIUM FILIX-FEMINA.—This remarkably beautiful variety of the common Lady Fern had been collected by Mr. James Cosh, in 1862, by a roadside in Stirlingshire. In the spring of last year Mr. Sadler had sown spores taken from the plant, some of which had germinated, but as yet exhibited none of the peculiarities of their parent. A specimen had been transmitted to Mr. Moore, of the Chelsea Botanic Garden, who pronounced it an undescribed variety; and as the Queen among Lady Ferns, recommended that it should be called *Vicotria*. The fronds are from ten to eighteen inches in length, and crested at the apex. The pinne are also crested, but instead of being single, as in most other varieties, they leave the rachis in pairs, and at such an angle that each alternate pair overlap each other, so as to give a beautiful plaited appearance to the whole frond.—*Gard. Chronicle.*

PRIMULA CORTUSOIDES.—This old favorite is likely to originate a race of very popular hardy border spring flowers. The large flowered and high colored varieties introduced from Japan by Mr. Veitch, of which that called *amaena* is the best, show every disposition to break away both in respect to color and form, and we shall not be sur-

prised to see some very beautiful things produced among the seedlings.—*Cottage Gardener.*

URCEOLINA AUREA.—This most charming bulb has been sent by Mr. Pearce from Pern, and has been lately flowering in the nursery of Messrs. Veitch. It forms two broad oval leaves, and a tapering scape a foot or so high, on the top of which appears an umbel composed of gracefully nodding flowers. These are the purest yellow, with the tips only green, ovate, triangular, 3-celled, with 14 ovules arranged in two rows in each cell. The general manner of growth when in flower is that of a *Phycella*, or some such plant. If it should prove obedient to cultivation, which we do not doubt, it will be a perfect gem in a conservatory.

We retain the excellent name of *Urceolina*, even although also employed in Zoology, in preference to *Collania*, a queer travesty of the name of an Italian Botanist.—*Gard. Chronicle.*

NEW ROSES.—At a recent Exhibition of the London Horticultural Society, Mr. W. Paul exhibited four seedling roses:

Globosa (Hybrid Perpetual), a globular, compact, crimson red flower.

Dr. Lindley, a shaded dark flower of very promising qualities.

Princess of Wales and *Robusta*, both of which were much admired.

Domestic Intelligence.

THE MAMMOTH PEAR TREE.—I wish to correct a mistake in Downing's "Fruit and Fruit Trees of America," page 318 old edition, 408 new edition, copied from an article of H. W. Beecher, in *Hovey's Magazine*—also by Dr. Warder, in Commission of Agriculture's Report, for 1861—viz.:

"Many fabulous stories are told of the Benefield Pear (the name it has been known by for many years) tree in Knox county, Ind. Downing says: 'One of the most remarkable Pear trees in this country is growing in *Illinois*, about ten miles north of *Vincennes*, (Ind.) The girth of its trunk one foot above ground, is ten feet, and at nine feet from ground, six and a half feet.' Dr. Warder refers to it in about the same language.

As these reports are incorrect, I will give one as correct as can be had, for I have visited the tree twice, measured it myself, and got information concerning it of Mrs. Wiley, who was a member of

Mrs. Oxletrees' family, the latter lady being yet living about three hundred yards from the tree.

Any person wishing to see the tree, will find it about one half mile east of Vincennes station on the railroad running from Terre Haute to Lafayette.

The tree is about eighty years old, having been set by Mrs. Oxletree after using it as a riding switch in a ride from Vincennes. She stuck it in the ground in the corner of the lot, and from it has grown this enormous tree. As I measured it, I found it to be 11 feet 10 inches in circumference 14 inches above the ground. Trunk only 5 feet. Height about 65 feet. Area of top 94 feet in circumference. The tree bears a heavy crop every other year—the intervening year about half a crop.

It stands in an open field on a north elevation. The soil is a light clay mixed with sand. Mrs. W. told me that over one hundred and thirty bushels of fruit had been measured from it in a single season. The tree came into bearing the fifteenth year, but with me the grafts have fruited in five years. Like the Dix pear it is almost thornless. It is remarkable that no blight of any kind touches it—neither does it sprout from the root.

The roots are exposed above the surface of the ground like the Beech. It has been on the decline about ten years, and seemingly cannot last more than ten more; but with care might have lived 25 years longer. I would sooner part with the Bartlett than with this variety. The fruit is of the medium quality. It is undoubtedly a French variety. Every man should have trees of this variety.—B. SWEET, in *Prairie Farmer.*

SUBSTITUTE FOR COAL.—A letter from Newburyport, says:—"The people are cutting large quantities of peat, the recent dry season being very favorable for its cutting. A great deal has been hauled off to dry, thus clearly showing that one class are free from the high price of coal and wood. There is plenty of peat to be had on the meadows."

THE OLD ELM AT PITTSFIELD.—The old Elm at Pittsfield, Mass., loved and admired by every son of Berkshire, ever since the settlement of Pittsfield, has at last been removed. It was one of the noted trees of the country, and attracted much attention from every stranger who visited the town from its stately form and venerable age. It has, at last, yielded to time and the elements. The returning visitor, says the *Eagle*, "will miss its tall, gray, shattered trunk, and its single green bough, waving like a banner high above all else. The town clung to the old tree as long as it could believe it

safe; indeed, we must confess that our love for it had warped our judgment, and that its condition after its fall shows that it has long been dangerous to passers under it. It was found, by Mr. W. M. Root, who counted its annual rings by the aid of a magnifying glass, that they indicated an age of 340 years, which is doubtless not far from correct. The height of the trunk to the first limb was 68 feet. The total height in the best days of the tree was 128 feet, and the circumference of the butt was 28 feet.

VINEGAR AND OLIVE OIL.—A great part of the vinegar consumed in Paris is produced by the distillation of vine-stalks. It is much stronger than vinegar produced from the distillation of wine, and it is consequently reduced by the addition of water previous to being offered for sale. The neighborhood of Orleans produces the greatest quantity of white wine vinegar sold in Paris. A great proportion of what is sold for olive oil is either poppy oil or beech oil flavored with olive oil. Unadulterated olive oil, which is scarce and dear in Paris, comes from Provence (where the production is constantly diminishing), from Genoa, and the island of Candia. Algeria now supplies a large quantity of olive oil. Rape oil is produced chiefly in the departments of the Nord, the Pas de Calais, and Calvados, where the cultivation of the plant is a great source of wealth. It is used for the lamp, for painting, and in various manufactures. Fish oil, brought to France by the boats engaged in the northern fishery, is chiefly employed in dressing leather.—*Scientific American*.

FINE GARDENS NEAR CHICAGO.—Since our last visit to H. M. Thompson's fine place at Lake Forest, he has added very materially to its embellishment. The Conservatory has been remodelled and handsomely fitted up every way; in it were the remains of what has been the finest show of Azaleas in the West. Besides this, Mr. T. has built quite a range of houses. In one is a beautiful lot of hot-house plants, all in the highest style of keeping. Conspicuous, and right in the centre, is a glorious example of the Palm, *Livingstonia Bourbonica*, from the Isle of Bourbon. To those who never saw these fine tropical plants, the example would give a good idea of what they are. Its leaves extend over a diameter of at least 15 feet. It forms an admirable centre around which are arranged a choice and rare collection of tropical plants from various parts of the globe. A few in flower; but the great beauty consists in the diversity of foliage, being

composed of those of the largest to the most tiny; as, for instance, the Palm and the *Selaginella densa*, a gem of a little thing. By the bye, here is a very good collection of ferns and mosses, that add much to the general effect; his Tree Ferns from Australia and New Holland being very grand.

We have quite a list of novelties noted, but fear their high sounding names would not sufficiently interest the general reader to warrant their insertion. Those who would like to see what money can do in gardening, had better take a trip to this place. We understand Mr. T. purchased of a prominent florist east, nearly a thousand dollars worth of plants. Right glad are we to see them among us, and tender our thanks to Mr. Thompson for his spirited liberality, and hope the example will be followed by others of the western merchant princes. The conservatory, a hothouse, and what was designed for a greenhouse, are heated by Weathered & Chervoy's hot water apparatus, without regard to expense.

The past winter has been very severe on many of the choice trees planted outside and the vines in the greenhouse, through insufficient covering, and on the Pears and other fruits. We noticed peaches from the orchard house as large as hickory nuts; and ripe strawberries had been picked while worth \$2.50 per quart in Chicago.

Mr. Frank Calvert is still the gardener here, and need not be ashamed of his works.

Next lot adjoining Mr. T., D. R. Holt, Esq., has a very pretty home; not so elaborate though tastily kept.

C. U. Stobe. This gentleman, formerly from Baltimore, now a florist of this city, is pushing ahead, and has a large quantity of Roses of choice kinds. His place is rather too near the famed Bridgeport to be pleasing, but he has a strong good soil for growing perpetual roses, seemingly a speciality with him. His grounds are on Stewart Avenue, a little south of the Archer Road.—E. SANDERS, in *Prairie Farmer*.

CRYSTALLIZED FRUIT.—Beat the white of an egg to a froth; dip your fruit in it; then roll it in white sifted sugar candy; when quite dry, place the fruit in a stove, to be very slowly dried. Or, you may dry your fruit first, then dip it in white of an egg and then dust it with white sugar, or sugar candy, finally drying it off.

WOOD FOR RAILROAD FUEL.—Ohio was a densely wooded country, and most of our railroads, in consequence of seeking the lowest grade, passed

through wooded districts: yet, on our main lines, the wood is disappearing at a rate which will soon put it out of the power of the railroad companies to command wood under a very high price. In former articles on this subject, we showed that the railroads of Ohio consumed (12,000) *twelve thousand acres of wood per annum*. At this rate it is very evident wood cannot be consumed by railroads very long at any moderate rate.—*Railroad Record*.

Foreign Intelligence.

HYBRIDIZATION OF FRUITS.—An ancient friend of Gil Blas laments that the Peaches, which, in his boyhood, were as big as Pumpkins, diminished sadly in size in his old age. Most of us have felt as he did with regard to the fruits of boyhood. By careful crossing, Bakewell improved the ragged, bony sheep of his youth into the full-fleeced fleshy sheep of the present day; and there is no reason why the present race of fruits should not by the means he employed, be improved into a race nearly as big as the youthful Pumpkins of Gil Blas' friend.

The introduction of orchard houses has removed the obstacles which have hitherto existed; the uncertainty of out-door cultivation has been too disheartening to the English fruit-grower, and our fruit gardens, with few exceptions, owe the introduction of improved varieties to foreign cultivators, who appear to have depended more upon chance than any skillfully arranged system; their efforts have however given very satisfactory results.

The Acton Scot Peach, a hybrid obtained by crossing the Early Nutmeg and Royal George Peach, raised by Knight, and more recently the Victoria and Prince of Wales Pears, raised by Mr. Huyshe, from the Marie Louise and Gansel's Bergamot, show that there is no lack of success in England, where skillful hands and heads are at work; these efforts have however been isolated, and it is during the years to come that the most important results may be expected from this interesting branch of horticulture.

In a well stocked and well cultivated orchard house, all the materials for the raising of seedlings exist, and as Peaches hold the first rank among refined fruit, I will begin with them. The earliest Peach known is the White Nutmeg, but valuable on that account only, the fruit being small and inferior; it should be improved by crossing with Grosse Mignonne, Noblesse, or Royal George; and to obtain size, with the Pavie de Pomponne or

Catharine; probably the produce of the first generation will be a disappointment, but patience is a most needful virtue in every thing connected with pomology, and the third or fourth generation may repair the defects of the first. Following the White Nutmeg we have the Red Nutmeg and Petite Mignonne, the latter a most delicious peach, but now too small; it has a great tendency to reproduce itself, but, fertilized with the large varieties already named, a very valuable early fruit may be hoped for.

The Early Anne, Early York, and Acton Scot are all excellent early peaches, but too small. The Early York reproduces itself from seed with little variation, and is likely, with careful crossing, to give the best results; it should be allied to the largest known varieties, irrespective of season of maturity.

The Shanghai Peach promises to be a valuable hybridizer; it is very large, very hardy and very productive, the flesh particularly firm and solid, with a good melting peach; a good market fruit ought to be raised from this variety.

It seems like gilding fine gold to improve the flavor of the Noblesse, but if crossed with the Stanwick Nectarine, this result is possible. To obtain size, combined with flavor, the Grosse Mignonne, Noblesse, Galande, and Royal George should be crossed with the large Clingstone Peaches. Some of the Pavies in the South of France are enormous, and as a melting peach will produce a Pavie from seed, and a Pavie a melting peach, some good hybrids may be obtained.

To prolong the Peach season, the late American varieties will be valuable; some of these will hang on the trees till November, and present an imposing exterior on the dessert table; they will not, however, bear the test of 'degustation.' They should be crossed with the Grosse Mignonne, Noblesse, and the Walburton Admirable.

The Desse and Boudin may be improved by an alliance with Stanwick Nectarine and Noblesse Peach.

Dr. Lindley, when the Stanwick Nectarine was introduced, pointed out its great value as a hybridizer. Crossed with the Pitmaston Orange, the Elruge, and the very precocious Fairchild's Early Nectarine, some fine varieties may probably be obtained.

A race of late Nectarines originating from the Peterborough a late melting sort has been raised here; though large and handsome its flesh is too tough. Crossed with melting peaches and Stanwick Nectarine, the season of good Nectarines, fully

equal in quality to the earlier kinds, may be prolonged until November; the very large Newington Nectarine will probably prove the parent of some fine melting varieties if allied to the freestone sorts.

In the orchard house here are now 110 seedling Peaches and Nectarines, nearly all bearing fruit with the help of glass and pot culture; this satisfactory result has been obtained in the short space of from three to five years.

I had the good fortune two years since, when attending the Fruit Congress at Namur, to be introduced to M. Gregoire-Nelis. This gentleman has earned a just reputation for the excellence of his seedling Pears; he was good natured enough to give me a history of his efforts, but he did not say that he had hybridized any varieties, his system consisting in the selection of the largest pips from the finest and best flavored fruits. If by this simple method so many good and diverse varieties have been obtained, a careful and systematic hybridization should give vastly superior results.

The Doyenné d'Été is the earliest of all Pears; small, with an agreeable but not superior flavor; it is an abundant bearer and should be crossed with either Jargonelle, Beurré Giffart, Bon Chrétien (Williams) Beurré Superfin, or Louise Bonne d'Avrenches, all possessing qualities in which it is deficient. The old fashioned Lammas, Green Chisel, and Citron des Carmes will probably be the parents of fine early Pears, crossed with larger and finer varieties. The Jargonelle and Beurré Giffart, fertilized with their hardier cousins, may produce seedlings hardy enough for the North of England, without the protection of a wall.

The enormous size of the Uvedale's St. Germain renders it a most important parent; crossed with Beurré Superfin, Jargonelle, or Marie Louise, the produce may possibly possess the delicate flavor of the latter, combined with the enormous size of the former, a result most devoutly to be desired, as our Pears may then at all events be as big as Pumpkins.

The best of our winter pears, Winter Nelis and Josephine de Malines, are too small; hybridized with either Beurré Diel, Triomphe de Jodoigne, Duchesse d'Angoulême, or Easter Beurré, a greatly improved progeny may result. During February we have the delicious Bergamotte d'Esperen; this is too small, and should be crossed with Gansel's Bergamot, Beurré Rance or Easter Beurré; in March and April the two last are large enough, but their flavor is not super-excellent. The recent introduction of Madame Millet has provided an excellent pear for May, and Bezi Mai and Morel will

last till June, but though they look well on the dessert table, they must not be tried by any other organ than that of sight; crossed with the high-flavored pears they will probably prove the parents of late varieties equal to Beurré Superfin, a very high standard.

There is a tendency in some pears to reproduce their race. The Beurré d'Arenberg is remarkable for this quality; the seedlings of this variety raised here differ from the parent only in the season of maturity. The excellent characteristics of the Passe Colmar are inherited by its descendants, and this quality will prove an important guide to the hybridizer. Before closing my notes on pears I may mention that Beurré Clairgeau and King Edward's, from their size and beauty, are undeniable; but they want flavor, and should be crossed with those of better quality.

If you will allow me, I will at some future time offer you some remarks on Plums, Apples, and other fruits. In the present race for improvement in all things, it would be a sad pity that Pomology should lag. I may here remark that pot cultivation under glass is indispensable; out of doors the experimentalist would generally reap nothing but disappointment. To carry out hybridizing successfully, many varieties of fruit must be collected; and as not more than three or four fruit on a plant will be needed, a moderate-sized pot may be used. The names of the parents from which seedlings are raised should be preserved, and the most minute attention given to all particulars connected with the races of seedlings, as the results are necessarily very slowly developed, and probably, to produce very marked progress, some generations of fruit must pass.—T. FRANCIS RIVERS, Sawbridgeworth, Herts, in *London Gardener's Chronicle*.

DESTROYING THE RED SPIDER.—The mixture used for the destruction of the red spider (and noticed by you in a former number), is not made from gum, but sago flour—a much cheaper mixture than gum, as it costs in Liverpool only about 10s. per cwt. Potato starch will do equally well, if sago flour is not obtainable. My starch was made in the following manner: 2 lbs. of sago flour were made into a thin paste, thickening it in the same way as the laundry-maids do when making starch. This paste was then poured into three gallons of boiling water, and the mixture well stirred up until it came to boiling again, it was then mixed with six gallons of cold water, and applied to the trees immediately by a syringe having a jointed nozzle. Thirty trees in my orchard house were syringed with the effect

shown on the leaf sent to the office of your journal.

It cannot be used too soon after being made. The cold water with which it is mixed reduces the temperature to something like 100° F., which is quite safe, but if allowed to get cold it has not the same fluidity as at first.—*Cottage Gardener*.

PORTABLE GREENHOUSES.—Every one, especially

nurserymen and florists, have at times houses they would like to remove; and the only objection to the popular fixed roof plan, is that they cannot be taken down without being entirely taken to pieces. The following sketch from the late Donald Beaton, in the *London Cottage Gardener*, seems to meet this want well. He says it has been some years erected and answers well:

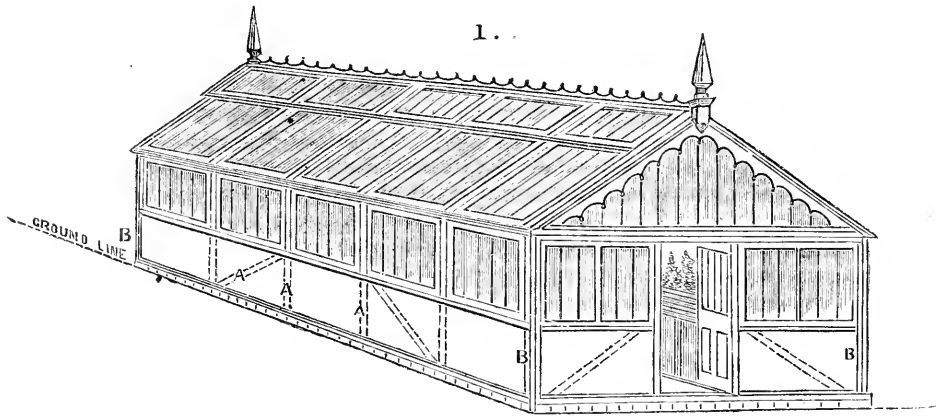


FIG. 1.—The dotted lines (A A A) show the framing, which would be covered with prepared boarding. The building would be fitted together at B B B, with screws, or keys, so as to be easily put together or taken asunder.

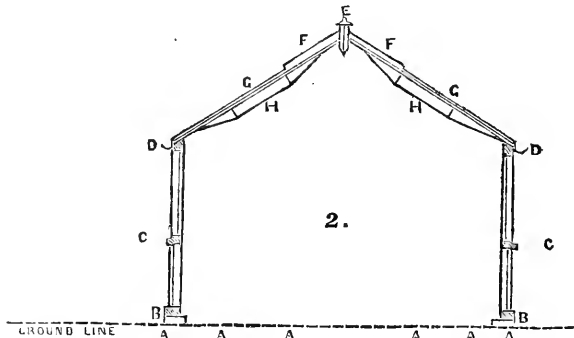


FIG. 2.—Section of Portable Greenhouse, without rafters, on the Truss Principle.

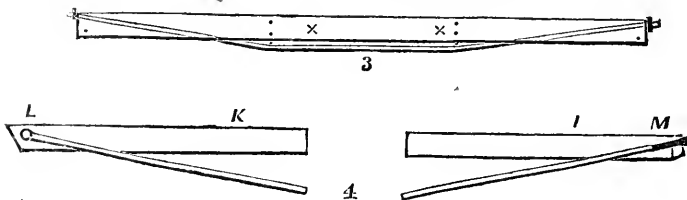


FIG. 3.—Trussed Ridge.

FIG. 4.—Details, showing application of Truss.

• A A are loose brick footings, laid on the surface of the ground.

B B are oak, or pitch pine sill plates, in one length.

C and D are light sills and eaves' plates, in one length, having the uprights halved at C.

X X is ridge in two thicknesses, of 9 inches by 1½ inch each, with a flat iron truss 1½ inch by ½ inch, bolted between to make it self supporting.

F F are ventilating flap lights.

G G are fixed lights.

H A are iron trusses, to support the roof, instead of rafters.

I and K the detail of ends of lights, showing the application of truss rods.

L is the top of lights.

M bottom end of lights. For a roof with lights 20 feet long, the trusses would do, if made with ½-inch round rod iron of S. C. quality.

CRICKET AND HORTICULTURE.—The fancies and tastes of man are various, and occasionally singular and eccentric. Every age has its hobby of some sort, which varies with our years as we pass from youth to manhood, and from manhood to old age; and those hobbies or recreations—call them what you will—are the pleasantest and best which leave no painful recollections behind them. Cricket and gardening are both highly conducive to health, and the man who is fond of one seems to take delight in the other. Many of the gentlemen connected with the large horticultural firms are enthusiasts in cricket; they see that “all work and no play makes Jack a dull boy,” and the style of play, when gardeners engage in it, may be called “philosophy in sport,” for more earnest and philosophical cricketers than the gardeners it would be hard to find. Among the firms most noted for cricket, I believe I may name Messrs. Carter & Co., A. Henderson & Co., and Mr. C. Turner. On the 14th inst., a match was played between eleven of Messrs. A. Henderson & Co., Pineapple Nurseries, and Messrs. Carter & Co., in the beautiful grounds of A. Nicolls, Esq., Oaklands Park, Kilburn. The game excited great interest among the gardening community, for they came from far and near to see the play, and were delighted with the spirit and skill exhibited by the combatants. The Hendersonians came off victorious.—*English Paper.*

ORCHARD HOUSES.—Having read so much about the difficulty of growing Apricots in houses, imagine my surprise at seeing, at Mr. River's, scores of large trees literally covered with Apricots—and

such Apricots! bright golden fruit, no Oranges could be more beautiful, and as to the taste, my mouth waters at the recollections; I had no idea they could be so improved. Some of the Peach trees at Chilwell are most beautiful, perfect cones, 7 or 8 feet in height, with leaves longer than my hand.

One thing struck me much at both places—there was plenty of fruit, luxuriant foliage, and hardly a trace of red spider to be seen, the trees being of large size, many of them seven to ten years in pots. There does not appear to be any great difference in their management at the two places; Mr. Pearson has built very handsome houses, those of Mr. Rivers are of a cheaper description, but the trees are all that could be wished. It appears to me that care in watering, and liberal feeding, are the great secrets of success. The under side of the foliage was syringed twice a day, the soil, when requiring water, being well soaked to the bottom of the pots. Each pot was covered with a couple of inches with a mixture of horse-droppings and malt dust, this Mr. Pearson called Mr. River's mixture, and he said it was superior to the manure water he recommends in his own book; and, from what I saw, I have no doubt of its value—it never stops the water, the dark foliage of the trees shows how it is enjoyed by Peaches, and wherever it has been applied to Vines strong white roots have run through it in all directions.

Last, not least, much was said about stopping the shoots. Up to the end of July every shoot, particularly on the upper part of the trees, was stopped, so that the trees are full of short stiff branches. This I feel sure is the main point in Apricot culture, as the crop appeared in exact proportion to the sturdy nature of the shoots; long thin branches either drop their fruit or it is small and poor.

Those who visit these establishments will see by the large number of trees cultivated for sale, that the orchard house is not looked upon as a mere fashion of the day; my own impression is that it is only in its infancy.—*Cottage Gardener.*

GOOD, ANNUALS AT CARTER'S SEED FARM.—*Nemesia compacta* is one of the prettiest of all annuals for small beds, and for pot culture it is extremely suitable, forming as it does compact tufts of clear blue white-lipped blossoms. It has also the good quality of remaining in beauty for many weeks in succession.

Of the Cuban *Datura ceratocaula* there is a large bed, which, when seen after sunset, is a truly glo-

rious sight, covered as it is with multitudes of great white blossoms each six inches in diameter, and so sweet-scented as to fill the air in their neighborhood with a delicious fragrance. On this account alone this *Datura* is well worth cultivating; but the peculiar time at which the blooms open also gives it additional interest.

Linum grandiflorum is at all times one of the most attractive of annuals, its brilliant crimson blossoms being conspicuous even at a considerable distance. No difficulty is here experienced, as with some, in getting the seeds to germinate, and the young plants raised on slight bottom heat and transplanted grow as freely and blossom even more profusely than *Phlox Drummondii*. Of the last there are also good beds.

Xeranthemums of different kinds are very gay, especially a new double purple, which is a great improvement on the old kind; their blooms being hard and dry, like those of *Helichrysums*, render them also very suitable for cutting for winter bouquets.

Annuals of other kinds are likewise plentiful, and grown in large quantities. Nearly ten acres are devoted to *Mignonette* alone, and the fragrance arising from it is delightful. Nor is there any lack of novelties this season; but these we pass by until their real merits have been more correctly determined by further trial.—*Gard. Chronicle*.

THE BREMEN WINE-CELLAR.—The following account is now going the round of the German press:—"The municipal wine vault of Bremen is the most celebrated in all Germany. One section, called the Rose, from the bronze bas-relief of roses over it, contains the famous *Rosenwein*, which is now two centuries and a half old. There, six large casks of Rhine wine, *Johannisberg*, and as many of *Hocheimer*, were placed in 1624. In the adjacent parts of the same division of the cellar, are twelve large casks bearing the names of the Apostles, and containing wines not less precious, but not so aged by a few years; the wine bearing the name of Judas is considered the best. The other parts of the cellar are occupied with wines of a subsequent growth. By degrees, as a few bottles of *Rosenwein* are drawn off, the cases are filled up with *Apostle wine*, and that with some sort still younger, and so on, in such a manner that the different casks are always kept very nearly full. A single bottle of *Rosenwein* now represents an immense value. A cask of wine containing 1,000 bottles cost, in 1624, 1,200*fl.* Calculating that sum at compound interest, with the expense of cellarage, a bottle would

positively cost 10,895,232*fl.* and a glass, or eighth part of a bottle, about 1,361,904*fl.* The *Rosenwein* and *Apostle wine* are never sold but to citizens of Bremen. The burgomasters alone have permission to draw off a few bottles, and to send them as presents to sovereigns. A citizen of Bremen may, in case of serious illness, procure a bottle at 20*fl.*, on his obtaining the certificate of his doctor and the consent of the municipal council. A poor inhabitant of Bremen may also obtain a bottle gratis, after having fulfilled certain formalities. A citizen has also the right of demanding a bottle when he receives any celebrated personage at his house as a guest. A bottle of *Rosenwein* was always sent by the city of Bremen to Goethe on his *fete day*."

ORNAMENTAL GRASSES.—*Eriochloa Ravenne*.—If any thing rather less noble, but more graceful than the *Pampas Grass*. It grows 6 feet high, and in habit and general appearance seems to be related to the preceding. The plumes are composed of silvery inflorescence, having a light elegant appearance. On a lawn, amid masses of bedding plants, it will form an object which will be justly admired for its gracefulness and beauty.

Phalaris phragmites (Striped Ribbon Grass, Ladies' Traces, Gardeners' Garters, etc.)—This is a very common and a very fine grass. A clump of it growing from 3 to 5 feet high on lawns is no despicable object, and in patches in borders it has a fine effect. It also forms a splendid back row to a wide ribbon border, and is charming as an edging to large beds, such as those containing *Dahlias* and *Hollyhocks*. A deep rich soil is necessary in order that it may attain its full growth when planted in groups; but it will grow almost anywhere, and for this reason does not receive that attention it so justly merits.

Bambusa gracilis.—A slender and most graceful tree-like grass. The stalks are erect, their extremities arching gracefully; and the bright grass-green leaves drooping and lashing the breeze, it is a charming object on a lawn, in arboretums, and wherever grace and elegance are desired. Though hardy in many situations, with me in Yorkshire it was cut down to the ground with 20° of frost, and completely destroyed by the severe frost of December 25th, 1860, when the thermometer was at 3° below zero. In warm sheltered situations it resists frost well, and though occasionally cut down to the ground in winter, new shoots rise from the stool, and attain a height of from 4 to 6 feet. It is very handsome and distinct.

Arundo donax.—As a noble ornamental-foliaged

plant, this is unrivalled in its way. It attains a height of from 8 to 10 feet, and has long graceful leaves, which renders it especially suitable for lawns, herbaceous borders, and arboretums. It is also especially adapted for planting on the margins of lakes, pools, and on islands, as it delights in moist soil. It should therefore be well supplied with water in summer when planted in light soils.

Arundo donax variegata.—Similar to the above, but with long, broad, elegantly decurved leaves, 2 or 3 inches broad, and from 2 to 3 feet in length, marked with broad silvery stripes their whole length. As a specimen on a lawn, amid bedding plants, or masses of green foliage, it forms a stately and picturesque object. In borders it stands out in bold relief among plants of more humble growth; and planted near lakes it forms a highly ornamental feature, whether examined close at hand or seen at a distance. As a centre bed or neuter it is unique, beautiful, and tropical in appearance. It is unrivalled as a decorative plant when treated as an exotic in the conservatory. It delights in rich deep moist soils, and not being so hardy as the species, it requires slight protection in winter in cold, low, and very elevated situations. Height from 6 to 10 feet.

Horticultural Notices.

PENN'A. HORTICULTURAL SOCIETY.

MONTHLY DISPLAY, AUGUST 9, 1864.

Committee on Plants and Flowers awarded the premium for the best Floral design, and for the best Basket of Cut Flowers, to F. O'Keefe, gardener to Joseph Harrison, Esq.

The best Hanging Basket and best Bouquet, to Donald McQueen, gardener to J. Longstreth, Esq.

Best six specimens of *Gladiolus*, to George W. Earle, Esq. These were: Don Juan, Pegassé, Vicomtesse de Belleville, Imperatrice, Cardinal, Clemencé.

Best collection of *Gladiolus*, H. A. Dreer, Esq. This was a very fine collection, embracing thirty-five named varieties.

R. Buist, Sr., and Meehan & Wandell also had collections of *Gladiolus*.

Best Herbaceous Phlox, to Meehan & Wandell. They were: Louis Van Houtte, Comtesse de Louricoult, Rosy Queen, the old white Decussata, and two seedlings.

"The Committee were highly pleased to observe a fine display of choice Zinnias, a cross between Z.

grandiflora coccinea, and Double Purple, very desirable acquisitions in garden culture for which they award a special premium of \$2."

Fruit Committee awarded the premiums for the best quart of Blackberries to the New Rochelle of Mr. A. L. Felten; and a special premium of \$2 to S. W. Noble, for a fine collection of Summer Pears and Apples as follows: Pears—a seedling, Washington, Summer Frank Real, Doyenne d'Été, Dearborn's Seedling, Bloodgood, Manning's Elizabeth, Julienne; Apples—Hawley, Nash, Red Astrachan, Cornell's Fancy, Gravenstein, Jenkins, Early Strawberry, Townsend, Summer Hagloe.

A special premium of \$1 to Allen Barr, gardener Francis C. Yarnall, Esq., for a superior bunch of Black Hamburg Grapes. \$1 to R. Robinson Scott, gardener to John Kennedy, Esq., for 2 very superior bunch of Dean's Superb grape; and honorably mentioned some superior grapes by D. McQueen.

NATIONAL POMOLOGICAL SOCIETY.

BIENNIAL MEETING, ROCHESTER, SEPT. 15, 1864.

DEAR FRIEND MONTHLY: You are anxious to finish up your forms and go to press, and yet you want to know something of Rochester and the doings of the Great Convention, before another month is gone; so, instead of my usual position in your easy chair, imagining myself an integral part of you, I sit myself in Dewey's accommodating seat, drop the editorial 'we' and for the nonce become one of your special correspondents.

Travelling by way of the Pennsylvania Central to Harrisburg, and thence by the way of the Northern Central,—as beautiful and direct a route as one could wish to find,—we found ourselves in the great Nursery City on the morning of the Convention, and in the Hall just as it was about to organize. Though unusual so early in the session to see so many present, there were over one hundred members to begin with, which during the three days augmented to near three hundred, affording near two hundred for an average attendance, just as the subjects, or the personal convenience of the members, admitted. We met friends from nearly every State, and Canada, your own State being very well represented in numbers among the rest.

The press, too, had its representatives, in Dr. Beadle, of the *Canada Farmer*; Mr. Muir, of the *Valley Farmer*, of St. Louis; Mr. Braedon, of the *Rural New-Yorker*; Dr. Thurber of the *American Agriculturist*; J. J. Thomas, of the *Country Gentleman*, and P. B. Mead; recently of *Horticulturist*.

The nurserymen of Rochester did not seem to us to take the interest in the Convention we expected, or else their number has been greatly over-enumerated, or we were particularly unfortunate in meeting them there. We met but half a dozen in all in the room, and on Mr. Barry and Mr. H. E. Hooker, fell the duty principally of taking part in the debates before the convention.

The President, Marshall P. Wilder, who has so ably governed the society for some years past, has been suffering from severe illness for a long time past, and was unable to be present. His friends represented that it was his urgent wish not to be renominated, and Mr. Barry was named with considerable applause as a worthy successor,—but in view of Mr. Wilder's eminent services and peculiar fitness for the position, it was hoped he would not positively decline, and he was unanimously re-elected, without any other name being placed in nomination.

Before Vice-Presidents—one from every State—were nominated, there was considerable discussion on the propriety of including names from those States which, from the force of circumstances, were unable to communicate with us. They were no longer members who had not paid their annual dues,—though perhaps no fault of theirs,—there was no way to notify them of their election, nor could they serve the society in any way if chosen,—and many names that would probably be offered would perhaps have their owners' dead and in their graves.

On the other hand, it was the general wish of the members that the society should strain a point to maintain its national character,—that the rebellion would soon be over and the Union re-established, and that then it would be a nice thing to say to those so long lost to us, "Pomology knows no sections, nationalities, races or politics,—here are your seats which we have kept warm for you." A compromise between sound parliamentary rules, and the feeling of good fellowship, was at last effected by allowing the names of life members, wherever they resided, to go into nomination. Of those elected in this way from Southern States, two of your old correspondents, dear *Monthly*, were elected: Colonel Frierson, of Columbia, Tennessee, and Richard Peters, of Atlanta, Georgia.

Of the discussions we have no space to say much in this letter, and we shall be better prepared to say more next month, when the report taken for the society by Mr. Bragdon, who was unremitting in attention to his arduous duties, shall appear, as we suppose an abstract soon will, in the excellent weekly paper to which he is attached.

We would like to add a few lines on Rochester itself, and its nurseries,—but with so much to see and hear, and so little time to accomplish it in, it would be injustice to those we did not see to say much of those we did. Ellwanger & Barry's nursery, is however conceded to be at the top of the list, and certainly it deserves all praise; and to Mr. Barry we are particularly indebted for very kind attention. Our jolly friend Ellwanger could not repress his "astonishment that the Editor of the leading Horticultural journal had never visited Rochester before;" but as we never started to make our journal a leading one,—that honor being due to our correspondents, and large circle of partial readers,—we do not see that we are much to blame. Here I may also say that the large lot of numbers your publisher sent as specimens for distribution through the fair, your agent Dewey says would be quite thrown away. He is tired, he remarked, offering it to gardeners, nurserymen and fruit-growers. The answer invariably is, "We take it already." Instead of distributing them in the Convention, he proposes to save them for the State Fair, where, he thinks, he will be able to find more heathens, to whom a little horticultural light will be both a mercy and a blessing.

Dewey is the prince of accommodators to us strangers here. His Horticultural Book Store, and Fruit Picture Gallery, is rather a sort of literary *table d'hôte* just now. At one desk is your humble correspondent, at another Parsons of Flushing, and all around, others "too numerous to mention."

H. E. Hooker & Co.'s establishment, fine as it is, had additional inducements for a prolonged tarrying, by his Cement tanks. Our opinion is that for bottom heat they are a complete success; and, as we have never known them to be considered completely successful before, of course there must be "something in it" of which we shall say more in our next.

Of Rochester itself, with its 15,000 acres of nursery trees,—its magnificent soil and climate,—its glorious Mountain Ashes and Horse Chestnuts,—its diffused horticultural taste, for even the car drivers are adepts in pomology, and the very boys can 'talk' grapes—its Plums and its Pears—not forgetting in the meantime its fire-blights and its Canada thistles, are among the matters of which I will not tell you now, but which, bit by bit, as occasion offers, will come out for your benefit, and the benefit of all who read you.

The next session will be held at St. Louis.

Now, as ever, dear *Monthly*, extremely yours,
M.

THE GARDENER'S MONTHLY.

DEVOTED TO

Horticulture, Arboriculture, Belong & Rural Affairs.

THOMAS MEEHAN, Editor.
W. G. P. BRINCKLOE, Publisher.

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VOL. VI.—NO. 11.

Hints for November.



FLOWER-GARDEN AND PLEASURE-GROUND.

Most of the tender plants that we desire to preserve over the season, have now been lifted from the borders, and removed to winter quarters,—and in a few weeks the beds will present a rough and forsaken appearance. It is too often the practice to leave the borders just in this neglected condition till spring-time returns. But the person of true taste finishes up the beds, and makes all tidy. In the absence of summer flowers, even order pleases.

As soon as the first white frost has blackened *dahlia leaves*, the stems should be cut back to a few inches of the ground, the label securely fastened, and the root placed away in a cool place secure from frost till next March, when it should be "sprouted," divided and again set out. Madeira vines, *tigridias*, *gladiolus*, *tuberoses*, &c., require the same attention.

As soon as the ground gets caked with the first real frost, herbaceous plants should be protected. Though hardy, they will repay this extra care,—mostly natives of woods or grassy places in their native State, they expect a covering of leaves or dry grass. We find dry leaves the best material for the purpose, a few inches is a sufficient depth,—a little soil being thrown on to prevent the leaves blowing away. Where such material is not at hand, the common garden soil may be drawn over them, as before recommended in these pages.

FRUIT GARDEN.

Except in the more northern portions of the continent, a southern aspect is the worst possible for

all kinds of fruits, except where the one idea of earliness is all important.

So much has been said in this journal on the proper preparation of the soil for orchards, that it need not now be repeated. We would only say, that a light dryish soil is the best to choose for the Peach. The Pear does best on a strong loamy soil. Plums much the same as the last. The Apple prefers a heavy loam, if on limestone so much the better. The Cherry does well in soils adapted to the Peach.

Apples, Quinces and Plums, should be examined before frost sets in, and if any borers have effected a lodgment—a jack-knife and strong piece of wire are all the implements necessary; a man will go over several hundred trees a-day. It is a cheap way of preserving trees. If many of the remedies proposed by correspondents in our paper, have been tried and found effectual, such as tobacco stems, &c., there will be few borers to deal with in the examination.

Probably most of our fruits do best in partial shade. The gooseberry and currant certainly do. The former must have shade; and if on the moist northern aspect of a wall, so much the better. The Raspberry prefers a rather moist soil, and partial shade.

All Raspberries are hardy where their canes ripen well; where the shoots appear not to have matured well they will have to be protected in winter by bending them down and covering with soil. Some tie them up to stakes and cover with rye straw, corn stalks or cedar branches. In soils where small plants are liable to heave out in winter, strawberries will need covering,—where this does not take place, they need no protection.

In cultivating raspberries on a large scale they do best in hills, as the cultivator keeps them from crowding each other so much. For garden culture they are better in rows, the suckers to be kept hoed out occasionally as they grow; enough only being left that will be required for fruiting next year. Where canes are required for new planta-

tions, of course a portion of the crop must be sacrificed to the suckers.

The Grape prefers a deep warm soil, but one that is not dry,—such as most limestone soils are after being trenched and drained. A partially shaded aspect is also preferable. Mildews and many diseases come from the drying influence of a full exposure to a July or August sun.

In choosing plants, select those that have been budded close to the ground, as when they are replanted the stocks should be buried an inch below the pear scion, which prevents the attacks of the quince borer. If a long stem has to be buried, the usual consequences of deep planting result, and do as much injury as the quince borer. Also in choosing, select, if possible, plants that have been raised from cuttings; for layered stocks have almost always a long deep tap looking root, on which dwarf pears do not do well. If we have to use such dwarf pear trees, better shorten some of this long trunk root before planting. Never plant what appears to be the stem of a tree far beneath the surface, under any circumstances, for disease will be most probably an ultimate consequence.

VEGETABLE GARDEN.

It is little use to attempt to grow vegetables well, unless the soil is so treated. They may be and are grown on thin soils, not only at a great expense for manure, and at a great risk of dying out in a dry season, and of having the roots rotted out in a wet one. In those parts where the frost has not yet been severe enough to injure the celery crop, it may have another earthing up. Care must be exercised in the operation not to let the earth get into the hearts of the plants, or they will be liable to rot. Where the plant has evidently finished its growth for the season, measures should be taken to preserve it through the winter. For family use, it is probably as well to let it stay where it is growing, covering the soil with leaves, litter or manure, to keep out the frost, so that it can be taken up as wanted. Where large quantities are frequently required, it is better to take it up and put it in a smaller compass, still protecting it in any way that may be readily accessible. It always keeps best in the natural soil, where it is cool and moist and free from frost, and whatever mode of protection is resorted to, these facts should be kept in view. Beets, turnips, and other root-crops, will also require protection. They are best divested of their foliage and packed in layers of sand in a cool cellar. Parsnips are best left in the soil as long as

possible. If any are wanted for late spring use, they may be left out to freeze in the soil, and will be much improved thereby. Cabbage is preserved in a variety of ways. If a few dozen only, they may be hung up by the roots in a cool cellar, or buried in the soil, heads downward, to keep out the rain, or laid on their sides as thickly as they can be placed, nearly covered with soil, and then completely covered with corn-stalks, litter, or any protecting material. The main object in protecting all these kinds of vegetables is to prevent their growth by keeping them as cool as possible, and to prevent shrivelling by keeping them moist. Cabbage plants, lettuce, and spinach sown last September, will require a slight protection. This is usually done by scattering straw loosely over. The intention is principally to check the frequent thawings, which draw the plants out of the ground.

In making new vegetable gardens, a south-east aspect should be chosen, as far as practicable. Earliness in the crops is a very great desideratum, and such an aspect favors this point materially. Too great a slope is objectionable, as inducing too great a run of water in heavy rains. The plots for the crops should be laid off in squares or parallelograms, for convenience in digging, and the edges of the walks set with box edging. If water can be introduced, it is a great convenience.

Sometimes broccoli does not head before there is danger of frosts, especially if growing vigorously. If taken up with small balls of earth, and set in a damp cellar, they will still perfect themselves.

Asparagus beds, after the tops have been cleared off, are better covered with litter or stable manure. The plants shoot easier for it next season.

When the ground becomes frozen, or no other work offers, preparation can always be made for advancing prospective work when it arrives. Bean-poles may be made; and if the ends are charred, and then dipped in coal-tar, the commonest material will be rendered nearly equal to the best cedar.

Communications.

ORANGES IN THE UNITED STATES.

BY H. T. WILLIAMS, BROOKLYN, N. Y.

[Concluded from page 296.]

I now take pleasure in offering the following extracts, more completely illustrating my ideas, and giving in a pleasant manner, matters of great interest.

The first is from the able pen of D. J. Browne.

"In E. Florida, the Orange grows spontaneously in the neighborhood of New Smyrna. In noticing that town in 1791, Bartram observes; "I was there about ten years ago, when the surveyor run the lines of the Colony, when there was neither habitation nor cleared field. It was then a famous Orange Grove, the upper or South promontory of a ridge nearly half a mile wide, and stretching North about forty miles. All this was *one entire Orange Grove*, with Live Oaks, Magnolias, Palms, Red Bays and others." He also makes frequent mention of extensive groves of Wild Oranges in Florida, as far North as latitude 28°. Dr. Baldwin, in 1817, in speaking of Fish's island says:—"Here are the remains of perhaps the most celebrated *Orange Grove* in the world. Some trees still remain that are 30 feet in height, and still retain a portion of their golden fruit." In the same year in describing the beauties of the St. John's he says: "You may eat *Oranges* from morning till night at every plantation along the shores, while the *wild* trees lending with their golden fruit over the water, present an enchanting appearance." These trees were not regarded as originally natives of the new world, but were introduced by the Spaniards at the time they settled Florida, or by a colony of Greeks and Minarcas, who founded New Smyrna, in 1769, while that country was in the possession of the English. Audubon, as late as 1832, observes. "Whatever its original country may be supposed to be, the Wild Orange is to all appearances indigenous in many parts of Florida, not only in the neighborhood of plantations, but in the wildest portions of that wild country, where there exist groves miles in length." This wild fruit is known in Florida by the name of the *bittersweet* Orange, which does not differ materially from the Seville Orange, and probably originated from that variety. The occurrence of these trees wherever they grow is indicative of good land.

For many years past, (1846) no small degree of attention has been paid to the culture of the common edible Oranges at St. Augustine, and on the river St. Johns. The number of trees owned by different individuals prior to 1835, varied from 1000 to 1500. Perhaps no person in Florida had more than the latter number in full bearing condition. At the time of the great frost, which occurred on the ninth of February of that year, there were many trees then to be found in St. Augustine which exceeded forty feet in height, with trunks from 20 to 27 inches in diameter, and which

probably were more than a century old. But there are many persons in that vicinity, at the present time, who are extensively engaged in the business. The late Mr. Kingsley left upwards of 6000 bearing trees in 1843, all of which are on the St. Johns. In addition to these, there are also on the same river, more than one hundred Orange Groves, which it is estimated contain 20,000 trees. At St. Augustine, it is said, there are at least 30,000 standard trees, 4000 of which are owned by Mr. J. Douglass, about the same number by V. Sanchez, and by Mr. J. Drisdale and the lady of the late Dr. Anderson, 1500 each. Notwithstanding the injuries which the trees have suffered by the depredations of insects for a few years, as well as by the discouragement caused by the frost, it may be observed that there are more standard trees planted in Florida at the present time, than there ever were at any former period. Previous to 1835, St. Augustine produced annually from 2,000,000 to 2,500,000 Oranges, which were equal in bulk to about 15,000 barrels. They were shipped to Charleston, Baltimore, New York, Boston, &c., and usually brought from \$1 to \$3 per hundred, or about \$3 per barrel, producing in the aggregate a little short of \$50,000 per annum. During the Orange season the port of St. Augustine formerly presented quite a commercial aspect, there being frequently from 15 to 20 vessels at a time loading with fruit. A person who was the owner of 100 standard trees, could safely rely on a yearly income arising therefrom of 2000 dollars, sometimes 3000 and even 4000. In 1829, Mr. A. Alvarez gathered from a single tree 6,500 Oranges, and it is said that there was a tree on the St. Johns which bore 10,000 fruits in one year, but ordinarily each tree produces 2000 fruits."

The great frost of 1835, referred to above, is more fully explained in the next letter, which is from the pen of Mr. De Bow himself. It is proper to state that such frosts are unusual and do not occur once in 10 or 12 or even 20 years, but even then not reaching down to the 28°, or hardly ever below St. Augustine.

"The Orange of Florida is very large and fine flavored, and commands the finest price of any in the market, having been sold in the grove as high as \$10 per 1000; It has been remarked that the fruits of the tropics generally grow to the greatest perfection near its verge, this is certainly true in regard to the Orange and banana, which, in the northernmost Bahama islands, are much superior to those of Cuba, St. Domingo and localities still nearer the Equator. From the shores of the

Atlantic to the Mississippi, the great frost of 1835 completely ruined the Orange groves; the effect was probably nowhere so severely felt as in Florida, where they furnished the staple crop of the country. The effect upon the City of St. Augustine, which was one vast Orange bower, is thus described by Williams.

"All kinds of fruit trees were killed to the ground, and many of these never started again from the roots, the wild groves suffered equally with the cultivated ones, the Orange had become the staple of our commerce, several millions being annually exported. Numerous groves had just been planted, and extensive nurseries could scarcely supply the demand for young trees; some of the groves the previous autumn had brought to their owners, one, two and three thousand dollars, and the increasing demand for the fruit opened prospects of mines of wealth to the inhabitants.

"Then came a frost, a chilling frost."

Some of the Orange groves estimated to be worth 10,000, were at once rendered worthless; a portion of the population of St. Augustine, who had become accustomed to look to their Orange groves for the purchase of luxuries and necessities, were left suddenly without resource. The town of St. Augustine, that heretofore appeared like a rustic village, its white houses peeping from the clustering boughs and golden fruit of its favorite tree, beneath whose shade the foreign invalid cooled his fevered limbs, and imbibed health from the forest tree, how is she fallen! Dry, unsightly poles, with rugged bark, stick up around her dwelling, and where the mocking bird delighted to build her nest and tune her lovely song, owls now hoot at night, and sterile winds whistle through the leafless branches. Never was a place more desolate."

Years passed on, a new growth had, in a measure redeemed this desolation, when a new calamity was experienced, not as sudden, but eventually as destructive as the frost. This was the visitation of the "insect," against whose ravages, nothing was found to avail. Grove after grove became blighted, yet as some localities were spared for several years, it was hoped the destruction would not be universal. The insect first made his appearance at Mandarin, a flourishing village upon the banks of the St. Johns. It was thought by some to have been imported on a couple of trees brought from China and planted here. Its true origin however is as little known as its true remedy. Like the weevil in the northern and southern wheat fields nothing can stay its progress until it has run its appointed cycle, and will probably disappear as mysteriously as it came.

Twice during the last hundred years has the Orange in the Mediterranean and Southern Europe been similarly attacked, and the hope that here as in Europe, the insect will pass away still continues to cheer the Florida Orange grower, and he awaits the happy moment to renew his operations with increased vigor. Had it not been for this calamity, the beautiful banks of the St. Johns now mostly a wilderness, would, probably by this time have been studded with villas and fringed with Orange groves, and thus they will be when the Orange can again be successfully cultivated, with the extraordinary facilities for a market which Florida will soon possess, there can be little danger of the supply exceeding the demand.

An Orange grove of common sized trees will produce from 500 to 2500 Oranges per tree, worth \$5 to \$25 per tree; 100 trees or more can be planted upon an acre; very little labor is required to keep a grove in condition. The sour Orange which grows spontaneously all over the peninsula, may be budded with the sweet Orange, and will bear in 3 years. In many places the banks of lakes and streams are lined with wild groves of Orange. Some of them great in extent. On the upper waters of the St. Johns and also on the Atlantic coast near the Smyrna, fine Oranges are now produced, those from the groves of Mr. Sheldon and Mr. Speer being of peculiarly large size and delicious flavor.

Lemons and limes grow very thickly in Florida, and are abundant in a wild state. The Sicily lemon transplanted in Florida, is much improved from the original. The writer of this has seen a specimen which measured 11 inches in circumference."

The different statements of the productiveness of the Orange tree (some saying 500, others 2000, and others 12,000,) can be reconciled only in this manner, by saying, that in the first year or two of bearing, the first statement is right, the production varying from 500 to 1000 per tree. J. L. Williams estimates the number of trees per acre at 100, which, at 500 per tree, and a price of \$7.50 per thousand, would realize \$375 per acre. This statement can be adopted for the first year or two of the bearing of the tree; in the three or four subsequent years, the production will average 2000 per tree; in the 10th year, if the tree is grafted, or the 15th if grown from cuttings, a larger estimate may be made, and even 5000 or 6000 may not seem unusual. The insect mentioned in the foregoing extract, is referred to in this our next one, as having almost entirely disappeared. This concluding statement was written to De Bow's Review, some ten years later, by a

physician settled in Manatee, a few miles South of Tampa, he speaks in terms of extravagant praise of the climate and soil, and especially of the cultivation of the Orange as follows:

"The great advantages to be derived from the cultivation of the Orange, lemon and lime in Florida, is a subject little known or appreciated out of the State. "The insect," which for 8 years has desolated the beautiful groves of these fruit which adorn the banks of the St. Johns, is rapidly disappearing, and the trees are assuming once more their healthy vigor, and beautiful verdure. The crop of fruit this year, (1851) I understand promises to be a fine and abundant one.

There is no culture in the world by which the foundation of an independent income can be laid, at the expense of so small an outlay, as the culture of the Orange and lemon in Florida. The method of establishing groves by transplanting the sour Orange trees from the hummocks where they abound in the wild state, and which has been in successful practice for several years, is of great importance; in the first place, because it does away with the difficulty of procuring sweet trees; and in the second place, because the sour trees planted and budded will bear much sooner than sweet trees from a nursery. The sour tree may be dug up carefully in the hummocks at any time from October to June. They should be topped about 4 feet from the ground and carefully planted and watered. In about three months, shoots large enough to be budded will grow out. The buds are taken from sweet trees and carefully inserted into the young shoots, just as peach trees are budded at the North. It is common for trees to bear the sweet Orange in 18 months from the budding. If the sour trees are selected from the hummocks of good size, (and they can be found of all sizes,) in three years they will be competent to bear 1000 Oranges each, and will go on every year increasing in size and production.

This culture is well adapted to persons of small capital, whose health requires a residence in Florida. A suitable piece of land is easily obtained, on which provision can be raised, and an extensive grove established at a very moderate expense; but to farmers and planters this culture presents its advantages over those of any other Southern State, for, without interfering at all with their agricultural operations, they can gradually and without the outlay of a dollar, plant an Orange grove, that may ultimately yield more than all the other productions.

The longevity of the Orange tree is another thing which invests it with a more permanent character

than common fruit trees. It lives and flourishes to a very advanced age. There are Orange trees now living in the city of Rome that are known to be more than 300 years old, so that an Orange grove when once established, will not only last a man's lifetime, but become a valuable inheritance for his children."

Such are the facts, such are the inducements offered, for the cultivation of the Orange in that State. It is stated that, according to official estimate, in the year 1860 there were imported into the United States, through the New York Custom House alone, no less than 2,500,000 dollars worth of foreign green fruits, the largest part of which are new Oranges and lemons. Congress in its last session imposed a duty of 25 per cent. payable in gold, on such importations; increase that duty according to present premium rates, and we have the enormous duty of 60 per cent., what the results will be, are evident, viz.: a decreased demand for such foreign fruits, and an immense encouragement to the development of this branch of horticulture in the Southern States. With the reclamation of the State of Florida to the Union, there will come opportunities and inducements to settlers and emigrants to enter into such culture; with the settlement of the country will come prosperity and wealth, and undoubtedly this happy state of circumstances will be owing in a good degree, to the cultivation of these most excellent fruits. And we may well hope that ere long this land, so blessed above all the rest of the Union, with skies ever bright, invigorating air, warm mild weather, and pleasant breezes, and a soil which, by the influence of the genial healthful climate, is capable of vast production, will be famed for its Orange groves and contented people, far above Sicily, the Azores, or Cuba.

HOT WATER TANKS.

BY PETER HENDERSON, JERSEY CITY.

MR. EDITOR:—Interested much in this important discussion, I cannot refrain from giving the experience I have had, and which I am again passing through, in constructing Tanks for my new propagating houses. Before doing so I endeavored to get all the information I could from the most experienced men in the country of the relative merits of cement and wood, but found that a large majority were opposed to cement, from the fact of their repeated failures, which however, I believe to have been only from faulty construction; for notwithstanding my friend, "Fox Meadow's" over confident assertion, that cement will not stand hot water,

I think I can convince him to the contrary if he will pay me a visit, as there is one which has been in successful operation for *three years*, within a couple of hundred yards of where I now write, without a flaw or crack in it; it is constructed of brick and cement, and "dumped on the ground," as one of your correspondents expresses it.

So you see that that part of the *patent* is also struck away from Mr. Hooker.

But want of time and want of confidence in being able to get cement Tanks properly constructed on the large scale I required, induced me to adopt again those formed of pine plank, knowing that these would last, at least a dozen years when properly planted when first put up.

The understructure of my Tanks is 3x4 Chestnut joists painted with gas tar, (as a preservative,) and correctly leveled on brick work, of the width and length required; on these are nailed 1½ inch tongued and grooved plank, of only 4 or 5 inches in width, all joints being well painted with white lead; narrow plank is much better than wide, as they suffer less by expansion. After the tanks are made, if not entirely water-tight, any little breakage will be quickly stopped by shaking a litter dry cement on the water at such places where the leaks are, the suction carrying down the particles of cement to the crevice, and the leak is quickly and effectually stopped.

The same practice was adopted on a grand scale in the building of the tunnel under the Thames at London, finding a dangerous break in several places that at first seemed unsurmountable, the happy idea occurred of filling the leak from *above*, accordingly, thousands of tons of cement was lowered to the bottom of the Thames, over the leaky portions of the tunnel, the suction carrying it directly to where it was wanted, this great work was successfully accomplished.

I think it unfortunate for Mr. Hooker that he troubled the wise heads at Washington with the invention; had he given it to the readers of the *Monthly* gratis, or rather in exchange for the vast amount of information he might have gleaned from your columns during the past six years, it might not have been so critically discussed, but when we are asked to pay for knowledge then we begin to question the ability of the instruction.

The only novelty I see in Mr. Hooker's plan is in cementing over the boards covering the Tank, but whether it has merit is not yet sufficiently tested; it cannot be as good as a covering of flagging or slate, though it may be somewhat cheaper.

TALKS IN A GARDEN.

BY L.

"Men must be taught as though you taught them not,
And things unknown, proposed as things forgot."

No. 1.—*Scene, a Summer-house.*

JOHN L. K.—A youth of lively parts, with his Virgil spread before him, over which he labors to construe the text so happily descriptive of rural affairs in the old Roman days—the Georgics—and reading, "Felix qui potuit rerum cognoscere causas," raises his eyes and exclaims, "that is fine sentiment for one of inquiring mind; Uncle, I think that is one of your favorite mottoes; I have heard you quote it many times, and if I construe it rightly, it means, "It is a good thing to know the reason why?"

UNCLE J.—But that is not a literal translation, neither is it choice English, in which you should ever aim to couch your phrases, while transferring ideas from a foreign language to your own. Happy is he who could know the causes of things, is closely literal, too literal to be pleasing; Dryden does better when he more freely converts the line into

"Happy the man, who studying nature's laws,
Through known effects can trace the secret cause."

But read on,

JOHN L. K.—Fortunatus est ille Deos qui novit
agrestes,

Panaque, Sylvanumque senem, Nymphasque
sorores!

"Blest, too, who knows each god that guards the swain,
Pan, old Sylvanus, and the Dryad train;"

As translated by Sotheby, literally and handsomely.

These lines seem to me to be more poetical than philosophical, and I think Virgil could not have known the causes of things, or he would not have been content to let Pan and old Sylvanus and the sylvan nymphs represent rural life, which we are taught requires a knowledge of science to as great a degree as does any art of city life.

UNCLE J.—My dear boy, your remarks are very good for one of your age; but you must be informed that what we term science, which is understood to mean accurate knowledge of the laws of nature as regulating the interchange or mutual influences of material objects, was utterly without existence in the Augustine days of Roman literature. Poetical images supplied the place of definite knowledge, and often very happily. The sylvan deities thus represented the influences favorable to the growth and maturing of plants; while Pan was esteemed the god of shepherds, huntsmen, etc.; and the sister nymphs were believed to inhabit every place, and to preside over the mountains, the woods, the

meadows, streams and fields. The beautiful language of Virgil is therefore but illustrative of a happy mode of covering ignorance by 'words without knowledge.'

JOHN L. K.—Do you believe we have gained much by substituting the harsh language of science for these beautiful images which throw a halo around the otherwise rude and repulsive; and charm where the hard terms of accurate knowledge would but deter and sadden?

UNCLE J.—My sentimental youngling, life is not poetry, though it may be poetical. Truth may be, in her common garb, forbidding to the uninitiated into her mysteries; the young may find more joy in the frolic days of sentiment, but added years will bring to the well regulated mind a love for truth for her own sake, and her enamored votary will worship at her altar, deeming her the only beautiful, and her voice more charming than that of any siren 'charm she ever so wisely.' Hear the glorious poet Milton, who, dearly as he loved the beautiful images which 'imagination bodies forth,' and high as his harp was tuned to sing of heavenly themes, exclaims:

"How charming is divine Philosophy!
Not harsh, and crabbed, as dull fools suppose,
But musical as is Apollo's lute,
And a perpetual feast of nectared sweets
Where no crude surfeit reigns."

JOHN L. K.—That is a fine passage, where did you find it,—in *Paradise Lost*? I did not know the poets had ever praised Philosophy. I supposed they were dreamers, who knew nothing about practical life, but passed their time in spinning rhymes which our business men consider stuff and nonsense.

UNCLE J.—There have been poets, so-called, who had been better employed in spinning oakum, than the rhymes they have left us. But, perhaps, they have served their day and generation as records of misapplied genius, if they ever possessed that very much abused quality of mind. But in calling poets dreamers, my dear boy, you do not separate them from the category into which the mass of mankind unhappily falls in the esteem of many beside the practical poet who proposed to

"sum up half mankind,
And add two-thirds of the remaining half,
And find the total of their hopes and fears
Dreams—empty dreams!"

JOHN L. K.—There you have a question in arithmetic. Is that passage found in any poet? I calculated that five-sixths of mankind were dreamers, very nearly the whole party, poets, men of science, and men of business!

UNCLE J.—Yes, you may find that passage in Cowper's *Task*, and it is a happily worded exclamation of the poet, when considering the unsub-

stantial nature of human pursuits, and the emptiness of every bubble for which we toil and strive and wear out body and mind, and I fear often sacrifice our immortal souls. This poet was surely as soundly practical, when he took this view of the toilings of humanity, as he who reviewing life, exclaimed:

"Why all this toil for triumphs of an hour!
What though we wade in wealth or soar in fame,
Earth's highest station ends in 'here he lies!'
And 'Dust to dust,' concludes her noblest song."

My dear boy, poetry is not prose run mad, as has been said of some dull passages in Wordsworth, nor is it the ravings of wild genius,—the untamed Pegasus that refuses to be yoked to the plow of useful labor. "Poetry is the highest type of expression at which a writer's fancy can aim. It is the form of language in which alone the most beautiful thoughts and poetical sentiments can be exquisitely expressed." And though among common untrained minds, who deem themselves practical, there may be many who repudiate the poetical, many of those

"Churls, who deem it heresy to think,
Who heed no music but the dollar's clink,
Who laugh to scorn the wisdom of the schools,
And deem the first of poets first of fools."

be assured, my dear boy, such are of the clan described by Dante as

"The misérables, who never truly lived."

But let us not forget our text, which you will remember was a line of your Virgil. Have you closed the book? let us see—he placed his happy man along with Pan, that old fellow half man and half goat, whether to represent his avocations or the beastly tendencies of corrupt human nature; and that other old sot and demigod, the foster father and companion of Bacchus, who lived in Arcadia, and was every day drunk. I never met with old Pan but once, long as I have lived in the country, and that was when wandering through the woods of Newstead Abbey, Lord Byron's early home, I came across two black leaven creatures, half man half goat, horribly repulsive, and which, from their infernal leer and beastly deformities, well deserved the appellation given them by the country people around, of the "old lord's devils." I thought it would have been well for him, as well as for the young lord, had they never been possessed of any others. Read on, or rather read Dryden's translation, and you will find that he has not given his country gentleman over to the companionship of a drunken crew, but has very much softened down the original, making him a good sober citizen, as he should be, who merely

"decks the bowers
Of sylvans, and adores the rural powers."

Well, we'll hope Virgil meant just so, but Pan was surely a very low fellow, and Silernus, though he wore a human form, was entirely a beast, as is proved by his penchant for the intoxicating cup, and daily revelry. Read further

"Happy he
Whose mind unmoved, the bribes of courts can see
Their glittering baits and purple slavery;
* * * * *
From his loved home no lucre him can draw;
The Senate's mad decrees he never saw,
Nor heard at brawling bars corrupted law."

He is not to be found among these

"Patriot fools that to popular praise aspire,
Or public speeches, which worse fools admire."

JOHN L. K.—That is rather hard on the politicians who are so anxious to save the country.

UNCLE J.—Not a whit too hard. You need not go farther than to one or more of the recent convolutions to find an illustration of the fact, that the breed is not dead, and that it has retained its peculiarities from ancient times, unimpaired. A fair case for Darwin, who, I fear, would not be able to show that the species has in the least changed from its "primordial type," though we all know "the struggle for existence," of these place-hunting reprobates has been "perfectly awful" since the world began, and that the "principle of natural selection" is as natural as possible to such as are urged by the common purpose of official spoil and private gain regardless of the demands of right and justice, of the fate of the nation and the interests of coming generations. And they have maintained their ground, unfortunately, as such Darwinian protégés should do, and like the vile dock or hogweed of Waste Commons, have usurped the places of useful herbs and spread and reign a rank and stinking nuisance in the nose of decent and virtuous plants.

JOHN L. K.—Why Uncle, your tirade is like the Irishman's letter which was to be as bad as possible at the beginning, and worse and worse all the way down.

UNCLE J.—John, you have not applied the proper epithet to my remarks. A tirade is an abusive speech. And as you are open to conviction, and desire to be instructed, let me show you that you have not used the proper term, because my remarks are not abusive. To abuse is to use improperly. Is to tell a man the truth about himself in an open manly manner abusive? Is it not rather a kindness? The old saw, "our best friends are those who tell us of our faults," and do our friends then abuse us by so doing? Certainly not, says the common consent of mankind, which has subscribed to the truth of this proverb, which, like all of its

class, as well said by Lord John Russell, is "the wit of one and the wisdom of many." Away with politicians, but give us in their place statesmen, yes,

"Men, high minded men,
With powers as far above dull brutes endued,
In forest, brake or den,
As beasts excel cold rocks and brambles rude;
Men who their duties know,
But know their rights, and knowing, dare maintain;
Prevent the long aimed blow,
And crush the tyrant while they rend the chain,
These constitute a state;
And sovereign law, that states collective will,
O'er thrones and globes elate,
Sits Empress, crowning good, repressing ill."

JOHN L. K.—And where did you find that flight? It is high-sounding, grand and good; that has the *true* democratic ring, not the sham pretensions counterfeit so current, that blows the trumpet of "liberty and equality," while it aims to use the shoulders of the deluded simpletons, whereon to mount to office and the freedom of the public purse!

UNCLE J.—My dear Nephew, are *you* not becoming abusive? You would certainly be so, were not your remarks so admirably appropriate. The lines whose authorship you desire to know, were written by Alceus, a Greek poet, who lived 620 years before Christ, in the time of Sappho, and you see he had a very clear idea of what men should be, when he sung, as translated by Sir William Jones,

"What constitute a state?
Not high raised battlements or labored mound,
Thick walled or moated gate,
Not cities fair, with spires and turrets crowned;
No—men high minded men, &c."

As we have already quoted.

JOHN L. K.—After that I shall think better of the ancients,—of the poets at any rate, who appear to have paid just tributes to virtue and manliness, though they may not have been patterns themselves. The love of rural life and homely duties, and sober virtues, appear thus in the old Greek and Roman at a very early time. This must have been in the golden days when Saturn reigned. Are there any older poets who have sung of rustic joys, and how far up the stream of time can we trace the springs of wisdom as shown by love of country life?

UNCLE J.—Yes, in Hesiod, who is by many considered older than Homer, and who lived according to one authority, the Aurundelian marble, nearly 1000 years before Christ, or 250 years before the founding of Rome. Hesiod has written in a manner that extorts the praises of every lover of truth and virtue. Hear him:

"Fools not to know that better for the soul,
An honest half than an ill-gotten whole,
How richer he who dines on herbs with health
Of mind, than knaves with all their wine and wealth."

JOHN L. K.—I would like to read more of old Hesiod,—have you a copy or a translation?

UNCLE J.—You must not give up your Greek as I hear you threaten, if you wish to enjoy Hesiod or Homer, for they wrote in Greek, a language transcending in beauty and power any modern tongue. Several passages from Hesiod have been done into English: that above quoted is by Consul Peter, and may be found in the Poets and Poetry of the Ancients,—they are well worth reading. Here is an old Elzevir copy of Hesiod, which I highly value, and though it is more than two hundred years old, it is as beautifully printed as a modern classic. These Elzevirs are much prized by book collectors. This belonged to your great-grandfather, who was a scholar, and who has left his mark upon its pages in a way that proves he studied, read and re-read the classics as few boys of our day care to do. The consequence was he knew the Greek—found it a delight—as does a learned Doctor and friend of mine, who enters into the spirit of the old poets, revelling in their beauties with a zest that affords him the highest and the purest pleasure which never dloys.

JOHN L. K.—I am afraid such admirers of the Greek poets, with all their praise of rural life, would not make very good farmers.

UNCLE J.—My thoughtful nephew, there is no natural antipathy between learning and industry,—between the love of the ideal and the interest in the real, or there ought not to be. They should rather act in harmony, each illustrating and adorning the other. You need not suppose that because you can read the latin of Virgil's Georgics, descriptive of Roman farming, that you will not make a farmer, which I know you have sometimes proposed to yourself. Learning and science are more antagonistic to dry-goods dealing and selling tape by the yard, than they are to farming; for these belittling pursuits, which dwarf and narrow the mind of their votaries, seem to be better performed without any culture, while farming demands for its wise conduct enlargement of mind and varied knowledge. The argument now used by those who are opposed to educating farmers up to the times, is precisely the same advanced by their fathers a century or more ago: that it is not politic that the working classes should be taught to read and write, for they would thereby become dissatisfied with their position, and refuse to labor! How absurd does such an argument appear to us now! Yet it is not a

whit more absurd than that now used to discourage farmers from educating their sons, that they may by the better knowledge of the principles of their profession, become fitted to use the tools of labor more deftly,—apply their practical wisdom more wisely, and become men in a profession in which their fathers were but children.

That is a low conception of the value of education that considers it only in the light of a training for what is called success in life,—which regards it only with reference to the facilities it may supply for the accumulation of property. If, as has been asserted by one of superior and enlightened intellect, "that existence is surely contemptible which regards only the preservation of a body made to perish," that philosophy of education which has no higher motive than material good,—which looks not to the elevation of the mind, and aims not to develope and perfect every faculty of the head and heart, is surely equally contemptible.

My dear boy, the earth is cooling, and the dew is falling, or as he who knows the reasons of things should say,—the invisible vapor is condensing into dew,—let us go into the house; continue as you have begun, cultivate your understanding, enlarge your conceptions of nature by the study of the natural sciences, correct and elevate your taste by familiarity with the best models in literature, and when you shall, by a course of training on the farm, have acquired that manual skill, and knowledge of rural economy which are equally necessary to success, you will not have reason to regret that you ever studied Virgil, but will daily realize the truth of that verse you were construing,

Felix, qui potuit verum cognoscere causas!

REPLY TO "FOX MEADOW."

BY H. E. HOOKER, ROCHESTER, N. Y.

Permit me to use a little space in your magazine to reply to the strictures of "Fox Meadow."

I fully concur in his first paragraph, and hope I shall never be found speculating in worthless inventions, nor claiming as *new* what others know to be *old*. I heartily despise shams and false pretences, and would be entirely unwilling to receive a dollar from a man to whom I had not given a full consideration.

One of the strongest desires I have is for the progress of Horticulture, all my business life has been spent in that direction, and I believe I stand in the same relation to it in the introduction of these cheap and simple tanks, that the patentee of an improved mower does to Agriculture: he may

receive an individual benefit, but he advances Agriculture, and gives more than he receives. If I could not receive some remuneration for allowing the public to use my invention, I should have kept it to myself as something giving me a superiority over my fellow nurserymen and gardeners, and reaped my reward for thought, expense and experiment in another way.

I have never by word or deed claimed as *new* the procuring of a current of hot water through difference in specific gravity, nor the use of Hydraulic cement, as a *new material* for the purpose of making cisterns or tanks for water, hot or cold; but distinctly disclaimed both.

My patent is for my method of constructing and applying these old materials and principles, in a manner both new and useful: this is the basis of many patents against which no cavil is raised. I have yet to see or hear from the first man who asserts that he has made tanks in the manner described by myself.

In regard to whether Hydraulic Cement or Water Lime, as some call it, will stand *hot water*, I assert, that constructed in the manner of my Patent Tanks, it will, perfectly; and offer my own working houses, now two years in use, and upon which not one cent's worth of time or material has ever been spent in repairs since they were first set in operation, as proof positive and indisputable upon this point; and, moreover, corroborated by the experience of other writers in your magazine, and by other parties using my tanks.

I have never asserted that Water Lime would not crack when plastered upon brick or stone, and exposed to currents of hot and cold water—for I fear it would, sooner or later; nor that it would not crack and peel off from a board, box or tank,—for I believe it would be ruptured by the shrinking or swelling of the wood work.

My tanks are so made as to be entirely free to contract or expand, independent of either wood or stone work: this is one of the decided advantages of my invention.

In regard to the power of these tanks to heat houses, let me say that if the heat is generated in the boiler and passed into the tanks it will be given off in the house. On first starting it will not heat up as quickly as cast iron, but it will not cool as quickly as cast iron, and the same amount of coal will do as much heating through cement tanks as it will through iron. The same remark will apply to wooden tanks, which I have used and seen others use, wholly to heat a house without either flue or iron pipe.

"Fox Meadow" sees some advantages in the houses I have described, for which I feel complimented. I think if he had been thorough in the use of his last maxim, and 'looked' well into the working of the tanks, he would not have 'leaped' into so vigorous a condemnation of them.

[The above note from Mr. Hooker was received before our last came from the press. He had not, therefore, seen "Fox Meadow's" last paper; but it nevertheless anticipates pretty much the latter's remarks, and is therefore appropriate.—ED.]

PREVENTIVE OF CANKER-WORM.

BY J. W. MANNING, READING, MASS.

Canker-worm grubs can be effectually prevented from ascending the trees by placing finely sifted coal ashes about the base of the trees, say six to twelve inches at the steepest angle they can be made to remain. The grubs lose foothold in the loose ashes and roll back to the bottom, and thus exhaust themselves; they, also, when in large numbers, cling together, and cannot extricate themselves, and are easily destroyed. This mode was first successfully practiced in this town, by Mr. W. T. Hartshorn, about four years ago. It was a perfect success; no Canker-worm having been seen in the orchard since. I have frequently passed the trees, and noted the healthy foliage as compared with neighboring trees, not treated thus.

Brush over the surface of the ashes frequently to prevent their becoming compact; if soaked with rain, renew the surface with dry ashes. Begin to apply ashes as soon as Oct. 25th, or at least early in November, and attend to it when the grubs run until spring.

Coal ashes, so often a nuisance, are in this way made useful (other dry mealy substitutes may be used). In spite of the usual remedies to prevent the ascent of the grub in former years, the worms injured the trees until coal ashes banished them. Try it and report result.

ORNAMENTAL DECIDUOUS TREES.

BY WALTER ELDER, PHILADELPHIA.

However uncomely the grades of grounds may be, all deformities are hid or converted into beauties by the proper distribution of growing trees, shrubbery, and flowers over them.

Beginners in rural improvements call for *ornamental* trees (!) not knowing that nearly all kinds of trees when well grown are ornamental. A selection may safely be made from the following genera

with their various species: Ash, Beech, Birch, Button-ball, Chestnut, Cherry, Cypress, Elm, Hickory, Larch, Linden, Locust, Horse-Chestnut, Magnolia, Maple, Mulberry, Kentucky Coffee-tree, Oak, Poplar, Plane-tree, Sycamore, Walnut, Willow and the various weeping trees. The various habits of growth; sizes and colors of foliage; the times of blooming and the height the trees attain at maturity, are all known to the skillful Landscape Gardener; and in his arrangements, they are blended into pleasing combinations with discriminate judgment and care. It is that which gives grace and elegance to the scenery. Nothing in the vegetable kingdom looks so noble and grand, as well grown trees, judiciously arranged. Even the house and out-buildings, whatever may be their style of architecture, look richer and more elegant when partially shaded among trees.

The counsel of the Landscape Gardener may save the half of expenses, and the remodelling of the whole in a few years.

In purchasing trees in nurseries, make a positive bargain to have the roots sent along with stems and branches; instead of getting them *cheap*, rather give a dime or two more for each tree to have them carefully dug up, packed, and transported. It will be a gain in the end, and keep off some disappointments, and success will crown the labors.

October and November, and March and April are the best months to transplant all kinds of deciduous trees.

HYBERNATION OF INSECTS, AND ITS RELATIONS TO HORTICULTURE.

BY PROFESSOR S. S. RATHVON, LANCASTER, PA.

Read before Pennsylvania Hort. Society, Sept. 6, '64.

According to the common Dictionary interpretation of the term hybernation or hibernation, it means the passage of animals in close or secluded winter quarters; but in a scientific sense, it also means the suspension of the animal functions, so far as to enable the animal to do without food, and yet, although in a torpid condition, to retain all the animal faculties; only requiring an increase of temperature to restore them to their original vitality.

The hybernation of *insects*, however, in its relations to the subject of horticulture, may properly include, not only the *Imago* and the *Pupa* states of these animals, but also the *larva* and the *ova* states; because it is in one of these four conditions that the races of these animals are from season to season perpetuated or continued, and therefore in this fourfold condition, these enemies of vegetation and of mankind must be regarded and discussed.

It is in the *ova* or egg state that the insect may be more numerous and more certainly transmitted from one season to another, for, in this state the provision made by the parent for the continuance of its species is the most ample, and the least liable to injury from incidental and external causes. The egg-germs of most insects seem to be so well secured, that no degree of cold or wet can have much effect upon them, while they continue in such localities as parental instinct may have placed them; and if they are inadvertently injured or destroyed, it is because they may have been subjected to conditions out of the ordinary course of nature, and such as no degree of animal instinct could have provided against. It should be the business of the horticulturist to search for these eggs at every favorable opportunity during the entire winter, and when they are discovered, they should be immediately destroyed. It will not be sufficient to detach them from their original locality and cast them upon the ground, for, although the dangers and the exposures to which they are liable there *may* so far damage them as to prevent their incubation at the proper time, yet, it is by no means *certain* that this desirable result will be attained.

The eggs of the "Sack-bearer," (*Thyridoxeric ephemeriformis*), which is so common upon the fruit and shade trees, in and about the city of Philadelphia, are secured in the female sac or follicle of the previous season, and these are secured to the small branches of the trees, where they hang all winter exposed to every variation of temperature, from the torrid to the frigid, without sustaining any injury from this cause. No matter how wet the season may be, or how much ice or snow may accumulate around these follicles, or how long it may continue, for their walls are so impervious to moisture, as to render them perfectly dry inside; moreover, the eggs are further provided for by being carefully packed up in flossy down, within the *pupa case* of the provident parent female. A knowledge of this fact, and also the ease with which these follicles may be seen after the trees have shed their leaves, and their accessibility by only ordinary means, ought to dictate to every horticulturist immediately what should be done.

The eggs of the "Tussock moth," or "Vaporer moth," (*Orgyia leucostigma*), instead of being secured within the rude cocoon constructed by the female, are deposited upon the outside, and are covered over with a frothy glutinous substance, which furnishes them sufficient protection to continue, or retain their vitality during the coldest winter. These rude cocoons, thus covered over

with eggs, may be seen during the winter adhering to the undersides of fence rails, branches of trees, or in any nook or corner where they are sufficiently out of the way not to be liable to disturbance. If there are old outhouses, or covered alleys, near the trees upon which the larva has matured itself, many of these cocoons will be found during the after part of the summer and the winter in such situations. Under favorable circumstances, three broods of these insects are produced in a single season; but two broods are quite common. In the moth state, the insects are rarely seen: the females being wingless, fall down and perish as soon as the eggs are deposited, and the proportion of males are as one to fifty, and sometimes even a hundred or more, and still more rarely seen.

Generally speaking, those insects whose transformations are 'incomplete,' *i. e.*, that have not a proper, or inactive *pupa* period, and that do not hibernate in the *imago* state, invariably deposit their eggs in autumn, and their species are continued by the hibernation of the *ova*. This is especially the case with some species of *Hemiptera*, and the larger portion of the *Orthoptera*. The latter order includes the Mantids, Spectres, Roaches, Earwigs, Crickets, Grasshoppers and Locusts. Some of these deposit their eggs upon small twigs, as in the case of some of the grasshoppers, but a larger number of them deposit them in small cavities formed in the earth, as the crickets and locusts. Perhaps I ought to mention here that I use the term 'locust' in its most universal sense, but not in its most popular sense in the United States. I simply mean a certain family of those insects usually called 'grasshoppers,' without discrimination, and not the *ciçada*, another insect of the same common name, one species of which appears every seventeen years in great numbers.

These eggs are capable of bearing a very low degree of cold without injury, and as those that are deposited in the ground are not more than an inch or two beneath the surface, they are exposed to all the rains and snows, and alternate freezings and thawings of the most rigid winter; and, judging from the vast numbers of these insects that make their appearance every summer, we may infer that their eggs have sustained but little injury during the advent of winter. It is not so easy a matter for persons who are advanced in life to discover these eggs without bringing the organs of vision too near the ground to make the position an agreeable one to continue long in, but children are capable of becoming quite expert in their discovery. It is common on some parts of the continent of Europe,

especially in France, to offer a small reward to children for their collection, and thus many of them are destroyed. The importance of such a measure may become apparent, when we consider the destruction of vegetation by these locusts in Africa, in South and Central America, in Mexico, and also in some of the territory now belonging to the United States. The eggs of the 'Katy-did,' and some allied species, are usually found to the number of from twenty to forty in two uniform rows, on small twigs of shrubbery or trees. These eggs are of an ashen color, and are about the size and shape of a flax seed, and are found diagonally side by side, forming a sort of plume.

There are several species of moths that girdle the smaller branches of trees with a band of their eggs, where they remain perfectly secure during the coldest winter. These eggs are cemented together laterally, so that they all stand upon their ends, and an assemblage of them forms a sort of a miniature muff or cylinder, the small branch on which they are, passing through the hollow centre. This kind of egg arrangement is peculiar to several species of *Gastropacha* or "Tree-lackey moths," but there are other species that deposit their eggs in a similar manner. When the trees in winter are without foliage, these eggs are almost as visible as the eggs of the two first first insects that I have alluded to, and are quite as easily destroyed. The pruning-shears for these ought to be brought into requisition, and the eggs gathered and burned, because in every one of them may be a hibernating embryo, that at the proper season will come forth a greedy destroyer.

The various species of *Coccus*, or "Scale insects," deposit their eggs in groups on the bark of the tender branches of trees, and cover them with a protecting shield. These eggs are not so visible, nor yet so accessible as the eggs of the other insects named, and when they occur in large and depleting numbers, their presence amounts to a calamity, because when the trees are once in foliage or bloom, there is no way approaching them without also seriously damaging the crop of fruit, and the tree itself. The eggs, however, of the *Coccus aceris*, that are found in such great abundance along the undersides of the branches of the Silver Maple and the Linden trees, are very observable, and may be destroyed in early spring without damage to the trees.

The foregoing are a few of such species of insects as deposit their eggs in autumn, and provide for their preservation during an intervening inclement season; but these few may serve to illustrate an important principle in animal economy, and also

the necessity of paying as much attention to this matter as its influence upon horticultural interests may demand.

There are various other modes of insect perpetuation in a hibernating state, but as the egg seems to be the first visible condition in which these animals are found, the destruction of a single egg may involve the fate of a thousand. Nothing but continuous and searching vigilance can arrest the destructive multiplication of insects, and keep them within safe bounds.

A large number of insects hibernate in the *larva* state, indeed, a larger number than we are aware of. The whole destructive brood, that in the spring of the year cuts off the young corn and garden vegetables in general, are of this kind, and are known under the comprehensive and familiar term of "Cut Worms." These insects are widely diffused, for, not only are our gardens all over the country infested with them, but also the fields of whole farms everywhere, and especially those that had the previous year been in clover. They are a stealthy enemy, for even in summer their habit is to lay concealed under the ground during the light of day, and to come forth on their destructive mission during the darkness of night. Some thing like those carnivorous quadrupeds that destroy other animals only for the purpose of sucking their blood, and then, leaving the carcase lay, go in search of a new victim,—so the "Cut-worm" seems to cut off one plant after another, without feeding upon any more of it than is necessary to effect its destruction. The moths of these insects come forth from the *pupa* state in the months of July and August, when they lay their eggs upon such succulent vegetation as may there be found; but oftener they are deposited on the bare ground, and the young larva feed upon any thing they can catch until the cold weather sets in, at which time they are about half, or three-quarters grown, when they creep into the ground, and pass the winter in a state of torpidity: all the functions being in a state of suspension, but if at any time there should be two or three days in succession that are unusually warm, even in winter, they will be found working their way towards the surface. Most of these "Cut-worms" belong to the genera *Noctua*, *Agrotis*, *Fusis*, etc., and the winged insects, of various shades of mottled and gray, may be found flitting about lights, during the warm evenings of July and August. The Cut-worms, however, cannot bear the same degree of cold as some other hibernating larvæ can, and therefore many of them are destroyed by late autumn and early spring plowing, especially if a sud-

den change of cold weather takes place after they are exposed. Alternations of freezing and thawing, when its influence can reach the Cut-worm, destroys many of them; and this is also the case where they may be exposed to alternations of wet and dry, especially if the temperature is low and cold.

There is a group or family of insect *larvæ* that do not go into the ground to effect their pupal transformations, which are usually recognized under the common name of "Caterpillars," being more or less covered with straight stiff hairs. Unlike the Cut-worms, the individuals belonging to this group feed during the day as well as in the night, and may be found on the foliage of various kinds of plants, shrubbery and trees. The larger number of the moths bred from this group are white and mottled, and are commonly called "Millers," or "Ghosts." They belong to *Aretia spilosoma*, and allied genera, and are of various sizes, expanding from one to two inches. They do not usually, nor all of them, pass the winter in a hibernating larval state; but as they seem to be more promiscuous in their periods of transformation, and bring forth a larger number of broods in the same season, many of them are therefore overtaken in the autumn before they have completed their larval development. They may thus be found half grown, and in the various stages between that and mature larva, secreted in various nooks and corners, where sufficient shelter may be found to secure them from violence or injurious exposure, but not necessarily from the cold, as in the case of the Cut-worms. These larvæ are capable of enduring an astonishing degree of cold, and alternate freezings and thawings, with apparent impunity. I have on several occasions cut them out of ice, where they had been by some accident suddenly immersed just before the water become congealed, and where I had seen them frozen in a week or ten days before I removed them from their icy prison, and on bringing them into a warm room, within an hour or two they were restored to the same life and activity in which we are accustomed to find them in midsummer. And not only this, but I have kept them in my room for a week or more in this condition, in the morning finding them inactive, torpid, or frozen stiff as icicles, but reviving again as soon as the proper temperature had been restored, by the kindling of a fire. But frequent and long-continued fastings in a full vital state, has finally destroyed life in them altogether; but I am convinced, that where their torpid or hibernating state is not too frequently interrupted, no degree of cold usual to this latitude, would have much effect upon them.

A few of the belated Lepidopterous larva may be found every spring cropping off the early vegetation, and then, having completed their larval periods, that had thus been prolonged, they are transformed into *pupa*, and in due season, come forth a 'moth,' and found a new colony about the time vegetation has acquired the necessary vigor to support them. Of course, the horticulturist can have no doubt what course he ought to pursue when any of these larva, even if but a single one, fall into his hands at any season of the year. And not only in regard to those I have above alluded to, but also in regard to the large number of those usually denominated "Grub-worms," found hybernating in the ground; and also the "Borers," or "Wood-worms," found in trees and decaying timbers. Some of these Wood-worms require three or four years to complete their larval period, and hence these must pass three or four hybernating seasons. A few of these are Lepidopterous insects, but the larger portion of the *Borers* are Coleopterous, commonly called "Beetles." Those large white *Grub-worms*, found in the earth, are the larva of various species of *Lamelicornia*, a family belonging to the order *Coleoptera*, and these are sometimes very destructive to the roots of vegetation; and some almost fabulous accounts have been given of their great numbers, and the magnitude of their damages, by English Entomologists. What they have been capable of doing in England, they may also do here, when their numbers are allowed to increase in this country as they have in Britain, and on the continent of Europe.

Various species of *Orthoptera*, especially those belonging to the families *Achetidae* and *Locustidae*, the "Crickets" and "Grasshoppers," may be found hybernating in states of development corresponding to the larval period of those orders in which the transformations are said to be "complete." Like the Caterpillars, these may only be those individuals that have been arrested in their development in the preceding autumn. Whatever their economies may be in this respect, it is certain that many of them survive the severest winters, and are found about half grown, as early as the first of March, in an active state, when the weather permits it. This is quite common with the genus *Tetrix*, which includes a group of the smaller species belonging to the family *Locustidae* of the order *Orthoptera*.

[To be continued.]

HOW TO FILL A HANGING BASKET.

BY ZETA PSI.

In a former number of the *Monthly* we described "How to fill a Vase," and it is now our intention to describe "How to fill a Hanging Basket."

Hanging baskets are usually made of wire; many however are made of terra-cotta, earthenware and rustic work. Of all mentioned, perhaps the latter is the most tasteful and the most beautiful.

If the basket be made of wire, we must procure some moss with which to line it, to prevent the earth from falling out. The best moss is that which is to be found growing in the woods by the sides of small streams and in other like damp places. In selecting it, preference should be given to that of a bright green color, and that which has not grown too tall. Well, having selected our moss, our next step must be that of placing it in the basket. This is easily done, and requires no directions other than that in placing it, be careful to arrange it so that it presents an entirely green surface on the outside. Do not try to shave off too much of the earth on the inside, but allow it to remain fully an inch thick.

The next question to be considered is the soil. We have found that three-fourths potting soil, (such as is usually employed in greenhouses), and one-fourth sand, answers admirably. Fill the basket half full of the above mixture, and then select your plants. "Select your plants!" we hear some one exclaim, "that is easier said than done!" Quite true; but we propose to assist the novice in his attempt. Of course there is, and always will be, various opinions as to what plants look well in a Hanging basket. And here we wish to be understood, that we are simply giving our opinion, hoping that if any differ from us (and doubtless many will) they will give their opinions on the subject in the columns of the *Monthly*.

We think that to look well, a Hanging basket should not have any thing in it that will stand up too high, or which, by growing, may be out of all proportion to the size of the basket. We refer to such plants as Fish and Rose Geraniums, Roses, Fuchsias, etc. In our opinion, Ferns form most appropriate centers; around the edges *Tradescantia*, *Periwinkle* and *Lobelia*s may be used to advantage. If the basket be suspended with a wire or chain of considerable length, nothing looks more charming than to see a climber such as *Maurandia* or *Thunbergia*, running up the wire. The beautiful *Cissus discolor* is exquisite in this position. Try it.

In speaking of "How to fill a Hanging basket," above, we have referred to those to hang in the open

air under piazzas, but when it is designed that it should hang in a hothouse, orchids may be employed with great effect.

WILD FLOWERS.

BY THOMAS GARDNER.

[Concluded from page 301.]

The Lily family is one of renowned beauty, and America has as pretty representatives as any country in the world, though the Japan species seem to have more fragrance and greater size. We have four true lilies, (*Liliums*)—*L. Canadense* grows in wet places all over the Union; *L. superbum* is common north, but does not extend far below Mason and Dixon's line; the *L. Philadelphicum* extends north to Canada, while the *L. Catesbei*, a very beautiful plant, is the only one common south. The "Dog-tooth Violet," (*Erythronium*), with yellow drooping flowers, and spoon-shaped leaves, so common in damp woods and meadows in spring, belongs also to the lily family. There is a white variety, but quite uncommon. The Quamash, or Western Squill, (*Camassia esculenta*), with large, onion-like roots, is a pretty flowering Western plant. The "Star of Bethlehem," (*Ornithogalum*), whitens every spring meadow. A yellow species, (*O. croceum*), is a native of Georgia.

We have now passed in review about all the handsome wild flowers of the United States. The object has been to call attention to them, and to say just so much about them as would direct towards them that spirit of inquiry that may lead to a better acquaintance. To point out each with precision, so that any one could be identified by the description above, would have necessitated the employment of technical terms, which it has been our study to avoid. It is our wish to see our pretty wild flowers popular, and this could be done only by treating an account of them in a popular manner. Works on American wild plants, of course, include all wild species, and the majority of these interest only the purely scientific student. Our work has been to separate the wheat from the chaff, for the benefit of those who desire only the grain of beauty. To the ladies of the United States, particularly, we commend our task. On them, more than on the sterner sex, devolves all those little arts that render a tasteful home loveable and lovely. Plants and flowers enter largely into these delicate arrangements; and if our chapter shall, in any degree, aid in selecting for our wild plants the posts of honor awarded hitherto to foreign introductions, certainly

no handsomer than they, we shall feel like the poet, who

"Having garlanded his native flowers,
Cast the wreath at Beauty's feet,
Who smiled—and that was his reward."

[The series of articles on "Wild Flowers" we have given in our past seven numbers, are taken from the first volume of "Report on Agriculture," of Commissioner Newton. The writer of the article, Mr. Thomas Gardner, has been a frequent contributor under what we suppose the learned ones call a *nom de plume*, or some other 'nom,' ever since the commencement of our journal, to its pages, and we are pleased to say will continue to do so as occasion offers. Mr. Gardner may have omitted a few good things from his list. We think he has. We should be pleased to have additions. It will be one of the best references as to what pretty wild flowers to look up for cultivation we know of.—ED.]

PEACHES.

BY JOEL A. SPERRY, NEW YORK.

I have tried an experiment with Peach trees for the last two seasons, and if the idea is good for any thing, I will give it to you, that your readers may have the benefit of it.

In the spring of 1863, I had in my garden two or three Peach trees that had the yellows very bad, so much so, that I considered them dead. I poured one gallon of boiling hot water on to each of them, and let it run down the trunk of the trees. The result was surprising to me. Instead of that deathly look, in the course of two or three weeks there appeared a new growth of leaves, fresh and green, and this season they all have had Peaches on them. I tried the same remedy on one this spring, and with the same result, so far as the growth is concerned.

Never put the most common plant in a dirty pot.

Never fill a pot so full of soil but that it may hold water enough to go through: every pot should have half an inch of vacancy above the compost.

Never tie up lettuces or endive, or earth up celery except when perfectly dry. They are sure to spoil if you do.

Plunge even hardy plants that are potted. A frost which could never reach the roots below the surface may destroy all the fibres if the pot be exposed.

The Gardener's Monthly.

PHILADELPHIA, NOVEMBER, 1864.

ALL Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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'HOOKER'S CEMENT TANKS.

We promised after some of our correspondents had discussed this subject, to offer some views of our own. In our two past numbers much has been said, and which may be reduced to the following points:—It is objected that.

1st. The idea is not original with Mr. Hooker, and he can therefore lay no claim to its exclusive use.

2d. If it were original, it is such a slight modification at best of an old idea, that in return for the free interchange of opinion so common among horticulturists, it should have been given free in return.

3d. The Tanks are worthless as water conducting materials, as they will leak without fail.

4th. They are unfit to heat horticultural buildings as the earth on which they rest and the materials surrounding them will absorb much heat that would go into the atmosphere by other modes of heating.

With regard to No. 1, it is a fact that Cement Tanks are not original with Mr. Hooker; but they have never become popular; and the reason evidently is, that no plan of construction has ever been used that has resulted in permanent satisfaction. Very few persons have ever abandoned a well arranged iron hot-water apparatus, whether on the tank or pipe system, because it succeeds very well; but from all that appears on the record, every attempt with Cement Tanks, however promising at first, has been eventually abandoned for something better. The presumption is that every Tank here before used, proved ultimately a failure. If, therefore, Mr. Hooker succeeds in making Cement Tanks that no one would willingly abandon; the inference is fair, that he has invented something new, and is entitled to claim what the law allows.

With regard to the propriety of asserting that claim we cannot have much to say. It is so like patenting an *idea*, that parties accustomed to free interchange of opinion will feel somewhat sore at the unusual circumstance. If it were a boiler, or a

spade, or a pruning knife, that could be formed on a certain plan, and then made an article of merchandize and delivered over ready made to the buyer without further trouble to him, as almost all other patented articles are, there would be no objection; but in this case, after getting the idea, the buyer has to construct the thing himself, which might fail in some particular, and then, if Mr. H's is a success, and the imitation not, it could not be of course the Hooker Tank, and the buyer ought not to have paid. On the other hand one might use it without buying the right—he might use Cement that was not Hooker's Cement; boards that were not Hooker's boards; or some little thing or other that some clever lawyer would show made the thing different from Hooker's Tank, and Mr. H. would have difficulty in recovering. The "blood" would come with the "flesh," and it would be a hard thing to get it pure as nominated in the "bond." It would need a second Daniel to come to judgment. We would rather sit on Sancho Panza's problem than on it. "In a certain town is a bridge, and at the end a gallows—whoever goes over the bridge, and says truly where he is going is unharmed—he who lies is hung on the gallows. A traveller, when asked, said "he was going to be hung on that gallows." If we let him pass he lied, and ought to be hung,—if we hang him, he told the truth, and we had no right to his life." Supposing Mr. Hooker has some claim, we fear he will have a thorny path to walk on.

Whatever others may have been Mr. Hooker's Tanks are not worthless, so far as we could judge on inspection. They answer admirably. The propagating house was everything to be desired. There were no more signs of crack than we see in a porcelain-glazed preserving kettle,—enough of *reining* to make the surface look picturesque, but not enough to let any water through. The water was pretty hot too. We dipped our finger hastily into the flow channel, but had to take it out quicker than it went in. A pretty good judge of temperature, without actual instrumental accuracy, we should say it was about 180°, in winter it must be warmer—the return water we could barely bear our finger in, and we should call it 130°. That the Cement does not crack, we attribute to the fact that the boards supporting it are sunk in the ground, and thus are kept regularly moist on all sides, which prevents warping, and consequently cracking from that cause,—and regularly warm on all sides, by which the interior expands regularly with the exterior, and so cannot crack from that cause either—and these two causes of cracking away, there is none other left.

But here comes objection four. "Sinking your

Tanks in the ground, to save crackings, you lose all the surface heat. Steering from Scylla you split on Charybdis. How can you heat a house in this way?" There is force in this objection. Though Mr. Hooker has a cucumber house heated in this manner, with no other source of surface heat, from which he has had a magnificent crop of cucumbers in full bearing since February last, we do not think it could be done in this way as a general thing. Where bottom heat is desired it is admirable, and if some plan of getting surface heat independent of it, but together, it would be perfection.

It is decidedly our opinion that it is because Mr. Hooker's Tanks are under ground they answer so well, and we now proceed to give what we consider an improvement, which any one may adopt.

The writer once built a Tank which for cheapness could not be surpassed. It was formed of inch white pine boards, and was forty feet long and three feet wide—the water thus circulating eighty feet. The Tank was built on pillars and cross pieces about three feet apart. The edges of the boards were planed "true" by a good carpenter and were set together, nailed well, but not tongued or grooved. The end edges of the boards were, however, tongued and grooved by hoop iron—the iron forming the tongue, and the saw the groove. Boards and carpenter work together cost but *fifteen dollars*. It was in operation as a hot water Tank for propagating five years. The fault was it would leak a little,—the air of the house being dryer than the air inside the Tank, the outside at the seams shrunk, and though the water inside kept the thing nearly tight there, just enough dropping would come through to be annoying, though not enough to interfere with the successful working of the plan.

Now if such a Tank were sunk *in the ground* instead of over it,—with moist material on the outside to prevent warping as the dry air did, such a Tank would be the very thing. If a few drops of water came through they would be absorbed by the material, and no one be the wiser by the loss. No Cement would be required, and there would be less material for the heat to pass through before you get it where you want it.

We have an idea that the *Gardener's Monthly* plan will be found as cheap as Mr. Hooker's, and as the subscribers to the *Gardener's Monthly* will have it free, and other people "two dollars per year paid in advance," the gordian knot sort of trouble about the patent right we have before referred to, our readers need not puzzle themselves about untying.

NEW SEEDLINGS.

It is the duty of such a magazine as ours, to guard its readers against being led away by the pardonable enthusiasm which raisers of new fruits throw around their seedling pets. To their eyes they are glorious visions of beauty; but to the more philosophical and matter of fact public, they often prove mere fog banks in which to loose their tempers and their cash.

Let us look around at the numerous New Seedling Fruits that have been introduced during the past quarter of a century, and ask how many have stood the test of time? In many cases the oldest are still the best; and the new ideas, which, in the estimation of many well qualified to judge, were to displace everything that dared compete with them, have themselves sunk into utter oblivion.

The greatest danger to the public comes from all opinions advanced on the merit of a variety, being founded on the fruit alone. A bunch of grapes perhaps is sent to the Editor of some popular magazine. He pronounces it the best of some seventy kinds he has tasted that season, and takes the bunch to a meeting of distinguished fruit growers, all of whom agree with him as to the superior excellence of the fruit tasted. But nothing more is ever heard of the grape's superiority afterwards. In the case referred to, we have never tasted a Cuyahoga berry that was anything near the excellence of the ones originally sent us.

Almost everything else, now retired, which were once popular, have started in the same way. The Clara grape is a familiar illustration; when presented before the Pennsylvania Horticultural Society, its fruit committee, then composed of some of the leading pomological characters of the Union, bestowed a very heavy and unusual premium to mark their sense of its extreme value. But who values the Clara grape now?

It should not be forgotten that raisers of Seedling Fruits when once the fancied excellence of their bantlings has become a conviction in their minds, take extra pains with them, and that these advantages result naturally in producing some really fine specimens. These are sent to the press and public exhibitions—wrote about, talked about, and introduced in every way conceivable, until as the facetious Dr. Ezra Michener would say, the whole community gets a fungus on the brain, which ultimately turns to marked disgust.

The newest exemplification of this state of affairs is in the Iona and Israella grapes. The way in which they are brought before the public has a very taking air,—and while we have no doubt the

parties who are "engineering the thing through" mean well enough, it is well for our readers to profit by the teachings of the past. The fruits of both were on exhibition at Rochester, and were evidently very good grapes. The dark one, Israella, was not very superior in flavor, but was recommended for its earliness—we should place it in the same class as to general merits with Logan, to which it may perhaps prove superior in some respects. The Iona was of a dark Catawba color, berries not so large as a perfect Catawba, and the flavor of the Catawba class, but not equal to a Catawba well ripened. "But it ripens so early and grows so well, is so healthy and free from mildews; and, what of all these can the Catawba do?" This is all very well. The Catawba was not once so lowly estimated as now—when these newer arrivals get abroad and find their level of cultivation, will they meet a better fate? What is there in them that societies and newspapers and leading men, should go out of their way, and laud these things so particularly and above all?

At the National Meeting at Rochester, there was a committee appointed to examine *all* the fruits on exhibition. Some how or another, another committee got appointed subsequently to *examine* the *Seedling* fruits. They bestowed especial attention on the grapes in their report. This Seedling was *said* to be this, and *said* to be that,—another was also referred to in this *say so* strain, so it went on culminating in a notice of Iona and Israella, when the *ipse dixit* was dropped, and the grapes bepraised in the most *positive* terms. Some innocent member, supposing that probably these grapes might have some faults, called upon Dr. Grant to come forward and tell the meeting all he knew about them. He knew no fault—rather he knew them to possess some very remarkable properties. "Is it a good keeper?" inquired one particularly anxious for information. "It will keep as long as you like!" was the doctor's opinion of this very accommodating variety.

To the credit of the society there was some inquiry by the committee how it got to be appointed over the one called to examine all the reports,—we did not hear the explanation, but when application was made by the committee for permission to re-write their notes,—said application was refused.

We suppose the action of the Society was not considered sufficiently endorsive of these Seedlings, so a master piece was attempted at the New York American Institute Exhibition. A few days before the time appointed for meeting, Mr. Horace Greely was induced to offer \$100 for the best American

Seedling Grapes. There was no time to let those who might compete against the Iona know of the offer. No monthly—probably no one weekly agricultural paper could get the offer before its readers in time. Indeed in the very Weekly Tribune in which we read the offer, there were strong indications that it was hoped and expected the Iona was to be the prize grape; a sort of prophetic anticipation of what appeared in a subsequent issue, that now that the premium had been awarded the Iona, now Dr. Grant would have to supply an immense stock for the enormous demand he was now sure to have for it. This is so far in the history as the time of writing this will allow. Before the press closes over the manuscript, we have no doubt we might find in the Tribune or somewhere else, a repetition of the great Delaware-house-blowing-down-destruction-plan of advertising, and the pleasing announcement made gratis, that an "immense stock is fortunately on hand."

Be this as it may, our friend Greely may have the consolation of feeling that his \$100 is gone to a grape, which, as shown by some fine specimens at Easton, a well ripened Catawba would beat on the simple quality of flavor alone, and the proprietors of the grape have the right to profit all they can by their business enterprise.

Our duty to the public is to guard them against placing too much value on these reports of societies or newspapers, or heavy premiums awarded. They are often gained by pressure, or are the result of nicely laid plans,—and besides there are many qualities of high value which an Editor or premium committee cannot reach. Some grapes have constitutions peculiarly affected by circumstances in their growth,—and this will give a very variable character to the fruit,—a healthy and vigorous vine, is of this much value that its fruit will be of uniform character all through. Bearing these things in mind, our readers will know how far to appreciate approving notices, and be able to act understandingly when proposing to add novelties to their lists.

Scraps and Queries.

✂ Communications for this department must reach the Editor on or before the 10th of the month.

✂ The Editor cannot answer letters for this department privately.

KIN THE BOTANIST.—A friend informs us that this was his correct name, not King. Also, that he was alive about 1826, as Mr. Nuttall made some

exchanges of specimens with him in that year. What ultimately became of him and his fine herbarium of American plants, no one seems to know.

GRAPES AT ROCHESTER—J. W. W., *Washington Heights, N. Y.*—"I perceive you have been to Rochester, attending the Pomological Convention. I suppose you will refer to it again in your next issue. Did you notice the *Yeddo Grape* there? (1) Buchanan told me he saw it there. If you did, let us have your opinion of it in the next *Monthly*. Buchanan gave me his opinion; I want to hear yours—then I shall come to a tolerably correct conclusion about it. (1)

My impression is that *Allen's Hybrid* is going to be one of the best of the new hardy grapes, (2) and Concord the next (3), not as regards delicacy of flavor, but its vigorous growth and productiveness, will more than make up for its lack of flavor—but enough; if I do not stop, you will think I am writing an essay for the magazine (4)."

[1. Our impression of the *Yeddo Grape* was favorable. It appeared to be late; but Mr. Saunders informs us that the vine was still growing rampantly,—had in fact grown already 25 feet this year, if we remember rightly,—and we all know that a bunch of grapes from a shoot that keeps growing late does not ripen early. It is too soon to speak decidedly of its merits.

2. The *Golden Chasselas* was for many years a very hardy foreign grape. *Allen's* grape is probably a true hybrid; but in so small a degree is it crossed with the native grape, that we fear it will be ultimately no harder than the *Golden Chasselas* is now.

3. We have so far seen no grape that in the *sum total* of good characters equals the *Concord*.

4. By reference to our long list of sins against Editors, we have not found any crime of this kind charged against our correspondent; but several good things placed to his credit on the top of a long page, with plenty of room at the bottom for future entries.]

CORRESPONDENTS—*Jersey City, Oct. 13th, 1864.*

THOMAS MEEHAN—Dear Sir: Will you allow me space in your columns to call attention to a difficulty, that most of us in business experience, in receiving orders with money enclosures, every now and then, *without either name or address*. It is a very unpleasant business for all concerned. Strangers, of course, thinking that the party to whom they have sent their money must have appropriated it, without sending the goods.

Although I have at various times received orders

in that way, the absent-minded gentlemen have always at length made inquiry why their orders had been neglected!

But during the last month, I have had *two*—one from ———, Kentucky, with the post mark so blurred that I could make out nothing more, enclosing an order and FIVE DOLLARS. The other from Cincinnati, Ohio, enclosing THIRTY DOLLARS, with an order, but also nameless!

No doubt both these parties must think that their orders are very slow in being filled, or—something worse. I trust that this may meet the eye of some of our anonymous patrons, so that they may know who is to blame.

Yours, truly, PETER HENDERSON,

[Every business man is troubled this way at times. It is much to be regretted that more care is not exercised. It is usually the result of haste. The writer received recently a heavy draft in an *unsealed envelope*, just as if the sender had mailed a circular. Another order, with a draft on Boston, simply dated from "Young America,"—a place we had never heard of. Singularly enough, no State or other place named on the draft either, and we had to write to the Boston house for the locale of their correspondents, in order to help us to find out our own. We have money now credited on our books for some years, to parties we don't know where, who no doubt look on us as swindlers, and who are 'satisfied' with their 'first and last experience with them fellows.' We suppose these things will be until the millenium comes.]

THE GREELY GRAPE PRIZE.—Since our remarks in another column were written, the following has appeared in the *New-York Tribune*:

"FRUIT CULTURE—GRAPES.—It will be recollected that the Editor of *The Tribune* recently offered three premiums of \$100 each for the Apple, Pear and Grape, respectively, best adapted to universal cultivation throughout the Middle and Northern States of the Union—these premiums to be awarded, at their own discretion as to time and manner, by the Fruit Department of the American Institute. That Committee took the whole matter into consideration at the late Institute Fair, and decided—as we had already heard, and as is confirmed by the following letter—to award the premium for the best Grape to Dr. C. W. Grant, for his "*Iona*,"—a new Grape, but already favorably known to eminent fruit-growers. We believe that the shortness of the preliminary notice precluded awards to any Pear or Apple. Dr. Grant has decided not to accept the premium awarded to his Grape, but, de-

clining it, to ask the Committee to re-open the competition, and give such further time that no question may remain as to the fullness of the scrutiny, whatever may or shall be said as to the justice of the ultimate award. Here is Dr. Grant's letter:

Copy.] IONA, Oct. 6th, 1864.

To the Committee on Grapes, American Institute:

Gentlemen: I have just received a copy of the award of the "Greely Prize," made by yourselves, and am naturally very much gratified to learn that the Iona received it. The terms in which you speak of it assure me that your judgment is in full harmony with the opinion that I have always entertained as to its merits. It may appear, however, that sufficient time had not been given to enable all who might have desired to bring their grapes for competition. I would, therefore, ask to refer the matter back to the Committee, declining to receive the premium for the present, to give full opportunity for all who may desire to present their grapes and vines for examination, either during the present season or the next year.

The statement in your award concerning the grapes before the public, seem almost to render the course which I feel constrained to take improper. I must, therefore, beg to assure the Committee that my action is not taken from any want of respect, but on the contrary, from the highest regard for their knowledge and judgment. The importance of the case to the public will, I hope, justify me in giving this additional labor to the Committee.

Very respectfully, C. W. GRANT.

The Editor of *The Tribune* respectfully asks all who have further suggestions to make on this subject to address them to Peter B. Mead, 335 Broadway, New York, of the Fruit Department, or Committee of the Institute aforesaid. He, the Editor, is not now at liberty to vary the terms of his offer; his obligation in the premises is limited to the payment of the money on the award of the Committee, which is composed of practical men, who will doubtless take pleasure in rendering this humble contribution to improvement in Fruit-growing as useful as may be."

From this it appears Mr. Greely left the 'time and manner' of the award to the Institute Club. They fixed it so that very few but their fellow member, Dr. Grant, could know much of it. How the Committee came to know that the Iona, which is in the hands of few "throughout the Northern and Middle States," except steam propagators, was "best adapted" of all in cultivation for those regions, is more than we can tell. Even Dr. Grant,

with his well known admirable shrewdness, declined "most respectfully" the proffered honor.

We have no doubt the intentions of the gentlemen composing the Committee of the Club, were well meaning enough,—but after such an unfortunate mistake, the public will have no faith in the award they may hereafter make, supposing that the competition is re-opened next year,—and as suggestions are in order, we would propose that the decision be left to gentlemen outside of the club, in whose judgment they themselves would have confidence, as well as the community. To continue the suggestion, we would name Dr. Warder, J. J. Thomas, and P. Barry.

RED, WHITE AND BLACK SPRUCE—*R. D., Waukegan, Ill.*—"I send you by mail three branches of apparently distinct varieties of native Spruces:

No. 1. we call Black Spruce, bearing a long, slender green cone (sample enclosed).

No. 2, we call White Spruce, bearing a short purple cone.

No. 3, we call Red Spruce, it also bears a short purple cone, very similar but rather smaller than No. 2. No. 3 is easily distinguished from the others by its dark red buds, and being of a different green from either of the others. It also commences new growth in spring much later than either of the others.

No. 1 is from an Island in Lake Michigan. No. 2 is from Western New York, and No. 3 from North-eastern New York.

I see by the last *Monthly* that you only admit of two varieties, claiming the Red and Black to be identical, while our Red and Black bear cones quite dissimilar. The cones of our White and Red resemble each other, but the buds and foliage are very different.

Several of your Western subscribers, including Mr. Phoenix and myself, request your opinion on the above."

[No. 1 is the White Spruce. No. 2, the glaucous variety of the Black Spruce. No. 3, the dark-leaved variety of the Black Spruce.

Some botanists think there really is but one species in all these Spruces,—that any one of them may be produced from the other by seed. These specimens of Mr. Douglass' tend to confirm this view, for specimens 1 and 2 are identical in every thing but the cones, which is the only character that identifies it with the Black Spruce species.]

COCOA-NUT REFUSE.—This material is highly

spoken of in the English papers, as a material for packing. The favor of a package of the Mead's Seedling Strawberry, from Mr. Peter B. Mead, just received, packed in it, shows the English to have said no more than it merits.

NAME OF PLANT—*P. B. R.*, *Burlington, Iowa.*

—"What is the name of the tree to which the enclosed leaf belongs? I do not know that it is native of this region, as I know of only one small specimen, and that was raised from seed sent from Tennessee. It resembles Kentucky Coffee-tree, but is not it."

[It is the *Melia Azederach*, a native of the East Indies, but nearly naturalized in our Southern States, where it has long been employed as a street tree.

If we remember rightly, the streets of Petersburg, Virginia, have nearly all of this kind for shade trees.

JUNIPERS—*A. B.*—"Is there any way in which a Juniper could be made to keep its branches together without constant tying. I have one which, for its associations, I highly value; but it has so ragged an appearance that it a continual eye sore."

—[Select a strong and leading shoot, to remain and form a central trunk for the tree; then cut back all the other shoots to within a few inches of where they start from,—and in future never allow any shoots to grow that may compete in vigor with the leading one. Young Junipers should be treated thus from the start.

YOUNG APPLES IN OLD ORCHARDS—*F. L. S.*

—"Will it do to set out young apple trees in the place where old ones have gone to decay. I have an orchard in which perhaps one-fourth of the trees are gone. Would like to fill their places with new ones, if they will prosper thus?"

[It is not according to sound doctrine to do so; but we have known some to succeed very well. A little lime should be mixed in with the old soil before planting, and a small quantity of salt would also most probably have a beneficial effect.]

FLOWERING OF THE SWEET POTATO—*P. B. R.*

—"Does the Sweet Potato ever flower in cultivation? I have been raising them in my garden for ten years, and have never seen a blossom."

[Our summers are not long enough. Grow one in a large tub, and keep it growing in a hothouse through the fall, it would probably flower about Christmas.]

SEEDLING GRAPE—*J. S.*, *Principio, Cecil Co., Md.*—The grapes sent, found growing wild in a wood, were very good for wild grapes, but not equal in quality to others in cultivation like them; that, unless it has some very marked peculiarities of growth or earliness that would render it desirable, we could not advise its propagation.

PRUNING GRAPE-VINES—*J. S.*, *Cincinnati, O.*

—"I am almost bewildered by the various opinions advanced as to the best mode of pruning the hardy grape, and should be glad of your opinion. What I want to know principally is, how long to trim the canes. Some cut them down to four feet, others think six better. What do you say?"

[Rot and mildew, and other troubles usually go with extra strong shoots. How to prune will depend much on your locality; for you know the more severely you winter prune, the stronger your vines grow. If your locality is very favorable to the vine, you can prune more closely and get extra fine fruit. If there be a tendency to trouble, prune longer. Better have the fruit not quite so fine, and have it healthy.]

EVERBEARING RASPBERRIES—*J. F. S.*—Which is the best fall or Everbearing Raspberry for general cultivation?

[Taking everything into consideration, we should name Catawissa. It is however rather fall-bearing than everbearing.]

GRAPES FOR A COLD VINERY—*A Subscriber, Baltimore, Md.*

—"Would respectfully request from your knowledge and experience a list of one dozen Grapes for a greenhouse, containing a furnace, in which a fire is only kindled when there is a likelihood of freezing weather. Of the twelve vines it is decided that three or four should be Black Hamburg. Will you please name the other eight or nine most desirable and eligible for the purpose? Have the new varieties, Golden Hamburg, Bowood and Hamburg Muscats, succeeded well in such houses as the above?"

[Golden Hamburg does well in a cold vinery. We would have 2 of them, 2 Grizzly Frontignan, 1 White Frontignan, 1 Royal Muscadine, 1 Lady Downe's Seedling, 1 Black Prince, 4 Black Hamburg.]

FLOWERING OF ENGLISH IVY—*P. B. R.*—Does English Ivy ever bloom in this country? and what is its flower like?

[It does not flower till it has reached the top of

the wall or tree. Then the flowers come out from the side branches. They are small, and green, in clusters, followed by berries as large as peas, which become black by October.]

HYBRID PERPETUAL ROSES—*I. F. S.*—Will you please give a list of twenty or thirty of the best (both old and new) Hybrid Perpetual Roses?

[Lion of Combats,	Caroline de Sansal,
Prince Albert,	Beauty of Waltham,
Youland of Arragon,	Comtesse Cecile de Cha-
Baron Prevost,	brilliant,
General Washington,	Geant des Batailles,
Madam Boll,	Alexandrine Bachmeteff,
General Jacqueminot	La Reine,
Jules Margottin,	Madam Rivers,
General Simpson,	Pius IX.,
Imperatrice Eugenie,	Senateur Vaisse,
John Hopper,	Paxton,
L'Enfant du Mont Car-	Souv. de Leveson Gower,
mel,	Victor Verdier,
Louis Buonaparte,	Madam Laffay,
Madam Masson,	Sydonie,
Crystal Palace,	Madame Campbell d'Islay,
	(this is sometimes called
Triomphe de Valenciennes].	

EXTENDING THE GARDENER'S MONTHLY—*P. B. R., Burlington, Iowa.*—"I am trying to extend the circulation of the *Monthly*, and hope to send the Publisher a few new names before New Years. Long life to the *Gardener's Monthly* and its Editor. "May your shadow never be less."

[We are much obliged for your good wishes, and still better kind efforts. It is to the interest of all our subscribers to do all they can to increase our circulation. The greater the circle of our readers, the more varied are the contributions, and the more we all learn of what is going on. Nurserymen, particularly, have a special interest in making the work known. Those who advertise, increase the field of their operations profitably; while those who do not advertise, by seeing advertisements from all parts of the country, are posted as to what stocks are in the country. When prices are low, they may judge there is an overstock; when high, they increase their own propagations,—while in the increase of horticultural taste, all classes of nurserymen and florists find their good account. We hope all our readers feel as does P. B. R.]

HORTICULTURE IN THE PENNSYLVANIA LEGISLATURE.—Our correspondent, Mr. Edwin Satterthwait, has been elected to the Pennsylvania House

of Assembly, to represent the Montgomery district. Mr. S. is an enthusiast in horticulture, and we are sure will neglect no opportunity of advancing the interests of Horticulture in its influence on the national prosperity in the State Capital.

NOTE ON THE PRONUNCIATION OF GLADIOLUS.

By Dr. Asa Gray.—Referring to your correspondent's note on the "Pronunciation of the Gladiolus," and your comment, that although the Latin pronunciation is certainly Gladiolus, yet, viewing it as a naturalized English word, you would say Gladiolus, "to suit the genius of the language, into which it is received;" I would suggest that the genius of the English language would be for Gladiolus, throwing the accent back; and I fancy that the common usage grew up somehow on the idea that it was the right pronunciation of the Latin word, being indeed more in accordance with Latin than with English analogy; so, if we would follow the latter, we should keep the classical pronunciation of *Gladi-olus* inviolate—not inviolate.

[Dr. Gray makes a good point, so far as that portion of our argument having reference to the analogy of pronunciation is concerned. As no other objection is made, we infer that the balance of the position taken is correct; namely, that when we adopt a word as an English word, we do not violate any rule of lingual propriety by altering the pronunciation. We are pleased to find that Dr. Gray himself confirms this view. On page 4 of his "Manual of Botany," he gives the Latin pronunciation Anemone, which is correct as Pliny would pronounce it,—but he gives as the correct English, Anemone, as we all call it. We might with as much justice, call on horticulturists to say Anymony, as Glad-ee-olus,—both right by Latin rules; but both wrong by English practice, which gives law to the English language.

Books, Catalogues, &c.

THE MINIATURE FRUIT GARDEN; or, the Culture of *Pyramidal and Bush Fruit Trees: with instructions for Root Pruning, &c.* By Thomas Rivers. Twelfth Edition. London: Longmans. Pp. 125. 1864.

We are reminded of the revolution wrought in our Fruit Gardens by the introduction of Pyramidal and Bush trees, and of the share which Mr. Rivers has had in bringing it about, by the appearance of a twelfth edition of his capital little book devoted to this subject. The readers of the pre-

vicious eleven editions must of necessity, comprise a goodly company of cultivators, and of these it is a fair presumption that many have become converts to the practice.

If it be true, as doubtless it is, that for the bulk of our hardy fruit produce we must rely on our old-fashioned orchards, judiciously managed after the principles which Mr. Cox is so well explaining in our columns, it is unquestionable, on the other hand, that many of our choicer fruits may be satisfactorily grown in the miniature fruit garden, as Mr. Rivers calls it, with such aid as is to be derived from Quince and other dwarfing stocks, and from the practice of root-pruning, biennial removal, and the summer pinching system of pruning applied to the formation of cordon, of pyramid, and of bush-formed trees.

This method of culture is eminently adapted for amateur gardeners who take a personal interest in the management of their own trees. Root-pruning and biennial removal are most essential features of it, and from the moderate size of the trees cannot be regarded as obstacles in the way of carrying it out. Their purport is to make and keep the trees healthy and fruitful by ensuring that their roots shall be kept near the surface within the influence of the sun and air. The ground over the roots of garden trees is too commonly dug once or twice a year and cropped, so that every surface fibre is destroyed, and the larger roots are driven downwards, with the certain result of inbibing crude watery sap, and developing a too surely fatal luxuriance—fatal because the wood scarcely ever ripens as it should do.

Perhaps of all hardy fruits the Pear is that which can be most profitably submitted to this discipline.

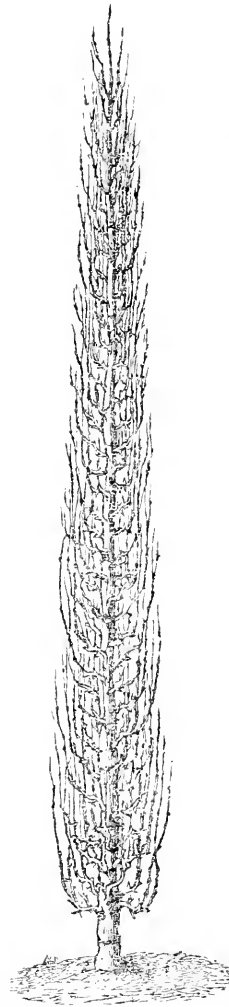
Indeed, worked on the Quince, and prepared by one or two removals, pyramidal Pears become a perfect mass of fibres, and the stem and branches literally clothed with blossom buds. Summer pinching, however, it is to be always remembered, is a most important element in the management of such trees; and so are winter transplanting and root-pruning, which, if not done annually, should at least be practiced every two years, early in November.

The French gardeners, Mr. Rivers tells us, have a curious yet interesting way of training Pear trees on Quince stock, which they call training *en fuseau*, or distaff training, the most simple of all modes. A young tree, one year old from the bud, is planted, and every side shoot, as soon as it has made four leaves, has its top pinched off, leaving three. This is the first pinching, early in June. These pinched

shoots all put forth young shoots which must be pinched to one leaf, and so on with all the young

shoots during the summer. The leading shoot is topped when it has reached 12 inches in length, and as soon as two or three shoots break out from it, all but the leaders are pinched in, in the way already described. This process is repeated every season, and a very complete distaff-like tree is the result. This, which is the cordon system applied to single-stemmed trees, is much to be recommended for small gardens, where it is desired to accommodate a considerable collection.

What the Quince stock is to the Pear, the Paradise stock is to the Apple, and the Mahaleb to the Cherry. On the Paradise stock Apples form pyramids of great beauty and utility. This stock, like the Quince, has a strong tendency to emit roots near the surface, and is therefore just suited for the practice of frequent transplantation. The sorts



of Apples should be discriminated, those of close compact habit being suitable for pyramids, while those of horizontal crooked growth must be treated as bush trees. The pinching in, which is the same in either case, may be practiced with Apples as with Pears, and the results are equally successful. The Apple, too, may be profitably grown in the form of single horizontal cordons, as an edging to kitchen garden borders. The *modus operandi* is this:—take a tree worked on the Paradise or Dorn stock, and, having a single shoot; plant it in a sloping position, and train the shoot, at about 10 or 12 inches from the ground, along a wire supported by oak posts, standing one foot above the surface

and 30 or 40 yards apart, the wire being passed through an eye at the top of iron pins placed at intervals of six feet. Plant the trees six feet apart, train them along the wire, and when they meet graft them into each other so as to form a continuous cordon. Every side shoot of these cordons is to be pinched in to three leaves all the summer; and the fruit, from being near the earth, and thus profiting largely by radiation, will be of very superior quality. Vertical cordon training may also be successfully adopted, both with Apple and Pear trees. It is, however, found with respect to all cordon trained trees, that root-pruning or removal is seldom required, the vital force of the plant being in most cases sufficiently reduced by the continuous pinching of the young shoots. All vertical cordon trees, too, should be supported by slight iron rods standing six feet above ground, and inserted 10 or 12 inches into the soil.

In respect to Plums, no stock has been found quite analogous in its effect on these trees, to that of the Quince and Paradise stocks on the Pear and Apple respectively: but it has been found that trees worked on the Plum stock are readily dwarfed by the system of annual or biennial transplantation.

The most charming of all pyramid fruit trees, however, are found in the varieties of Duke and Morello Cherry worked on the Mahaleb stock. These, by following out the summer pinching and winter transplanting as with Pears and Plums, become, to use Mr. Rivers' words, "in two or three years the most delightful fruit trees ever seen, for in spring they are perfect nosegays of flowers, and in summer clusters of fruit—if spared by spring frosts." As vertical cordons, too, nothing can be more charming than these kinds of Cherries.

As to frequency of removal, Mr. Rivers lays down the following data:—If the soil be very rich, so as to induce the trees to make shoots of 18 inches long in one season, they may be transplanted annually till this rate of growth is checked. If they only make a growth of 6 or 8 inches, they may be transplanted biennially. If the soil is such that the trees grow but very slowly, root-pruning is more advantageous than removal, as they sustain less check than by the latter operation.

Double grafting is another secret of success with respect to Pears; and this is the history which Mr. Rivers gives of it:—"I observed," he remarks, "when budding and grafting Pears on Quince, that some varieties did not grow freely on it, especially Gansel's Bergamot, Knight's Monarch, and others. I found that the Beurré d'Amanlis formed a most perfect union with the stock, and seemed most en-

during, for I had seen trees in France at least 50 years old. I therefore fixed on this sort for experiment, and had thirty trees two years old from the bud, grafted with Gansel's Bergamot. These grafts flourished, and became so prolific that when three or four years old they bore from three to four dozens of fruit. There are many Pears of the finest quality but of a delicate and unfertile habit, that may be much improved by double grafting. With Apples the plan is of less importance, the Paradise stock securing perfect health and fertility in most soils."—*London Gardener's Chronicle*.

New and Rare Fruits.

ROGER'S No. 4 GRAPE.—I am pleased to see the Roger's Hybrid No. 19 figured in the *Monthly*; have no comment to make upon it, but will send you a bunch of No. 4, which I deem a grape worth cultivating.

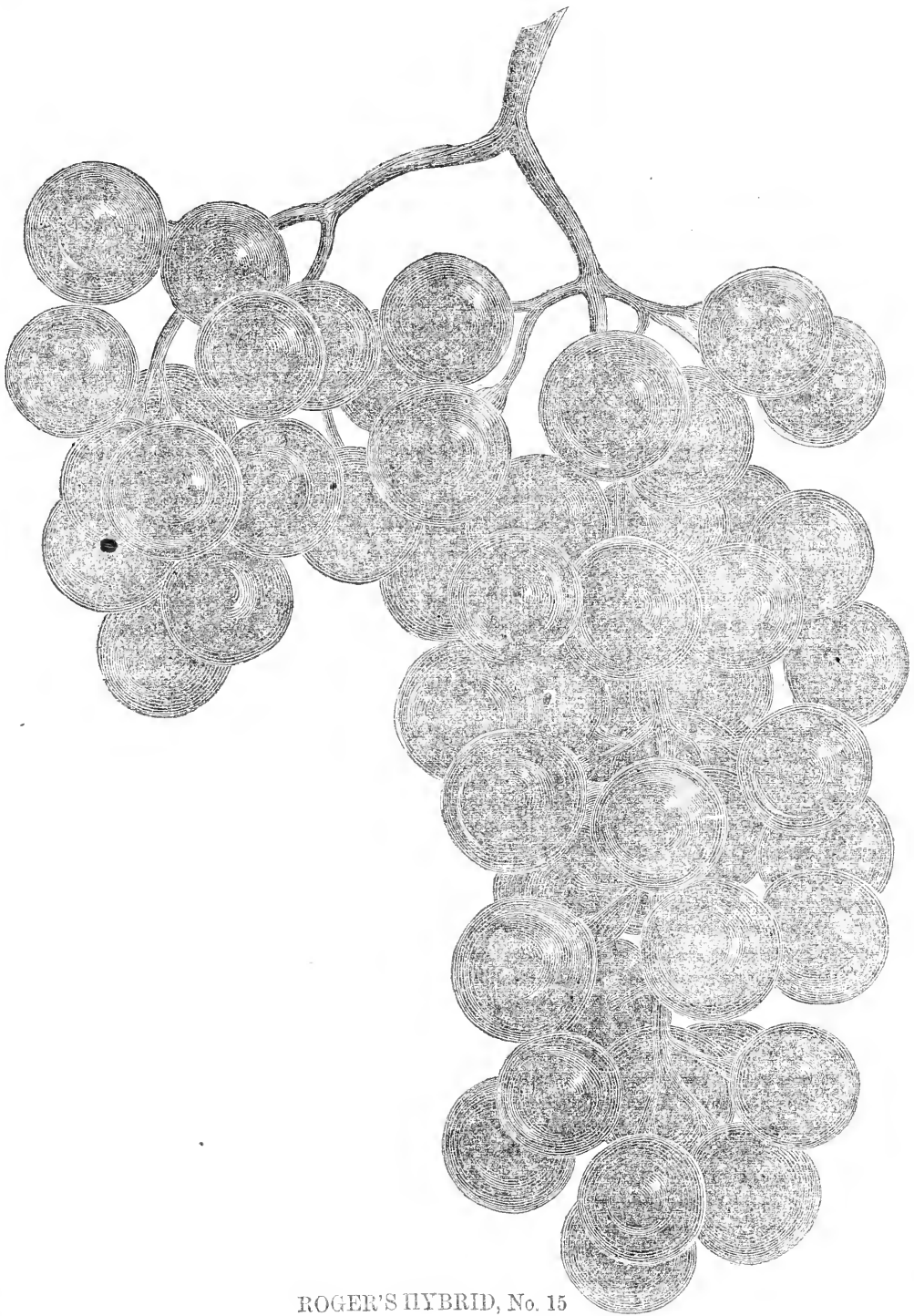
Its size and beauty is equalled by its vigor, hardiness and productiveness; and of its quality you can judge by tasting. This No. 4 ripens with the Concord.

The figure in some Horticultural journals of this grape, is a caricature on it as grown here. I may be too sanguine, but I really think it will displace our favorite, Concord, when it becomes disseminated. The bunch I send you was grown by our devoted Pomological Pioneer, J. B. Garber, of Columbia. My vines were robbed of their fruit by insects and human depredators. Were I to give a list of 6 of the Roger's Hybrids, I would name Nos. 1, 3, 4, 15, 10, and 34.—SAMUEL MILLER, *Aron, Lebanon Co., Pa.*

[This was so handsome a bunch, we could not resist the temptation of engraving it. That "Fox grape," we are sure, ought to be proud of its progeny.—ED.]

THE DIANA HAMBURG AND WHITE MUSK GRAPES.—We send you two bunches of our cross-bred seedling grapes, the 'Diana Hamburg' and the 'White Musk.'

This bunch of the Diana Hamburg is an inferior one, you perceive, compared with those of this variety exhibited at the National Pomological Convention. We are unable to send you a larger bunch, owing to the grapes being stolen by some contemptible thief; who, it is to be hoped, may yet receive his just deserts. There were clusters on the vine three times as large as the one we send you; the



ROGER'S HYBRID, No. 15

berries were also much larger than those composing this bunch. The vine seems to be a slow grower, but makes firm, short-jointed wood, with leaves the same thickness as the Delaware, slightly downy underneath. We think the vine is perfectly hardy, and shall test it this winter by leaving it exposed on the trellis, after trimming off all the wood we intend to propagate.

The White Musk is probably a cross between the Isabella and Chasselas Musque. We thought before the vine fruited, that it was a cross between the Isabella and Black Hamburg, as that was what we intended to produce; but as the fruit is white, and of a *foreign musk* flavor, there must have been some mistake in procuring the pollen.

The White Musk cluster has had some berries picked from it; it was the largest on the vine.

The Diana Hamburg and White Musk vines are both four (4) years old, and this is the first season they have produced fruit.

There was one bunch on the Diana Hamburg that was about 7 inches long, heavily and regularly shouldered, this was exhibited at the State Fair where it excited considerable attention, but was not fully ripe at that time. Its season of ripening is about the same as that of the Diana. Hope the flavor of these grapes may please you.—MOORE BROTHERS, *Rochester, N. Y.*

[It is remarkable that there should be any doubts about the fact of true hybrids being obtained between the native species of grapes and the foreign one. We understood Mr. Barry and Mr. Hovey both to take this position with regard to Roger's hybrids,—though we think the latter gentleman modified his views when speaking of Allen's Hybrid. We see nothing impossible in the matter,—nor do we see how so many gentlemen should be mistaken in regard to the results of their experiments or the kinds they raised their seedlings from. On the other hand, the inference is just, that without hybridization, it is unlikely that so many superior kinds could be raised from comparatively worthless ones, by chance alone.

In this case, we have amused ourselves by asking friends, as they dropped into our office, "to open their mouth and shut their eyes," and they have invariably thought that they had a 'Black Hamburg.' Could a mere seedling of Diana, independent of hybridization, so deceive them? We think not.

With regard to the grapes themselves, we must say the flavor is exquisite. They have not quite lost their native caste; but it is so blended with the rich sweetness of the foreign, as to impart a

piquancy which, to our taste, renders them more agreeable than a Black Hamburg. What we would like now to be assured of is, whether it will retain this good character as a general thing,—whether it will grow and do well under any ordinary circumstances as the Concord will; if it will do all these, our opinion is that nine-tenths of the grapes in cultivation may be better substituted by these of Messrs. Moore.

THE NEW "MISSOURIAN APPLE."—It is a Kansas seedling, and is thus described by Mr. J. H. Tice, in the "Transactions of the St. Louis Horticultural Society:—"

"Apple quite large, round, color a beautiful yellow ground striped with bright red. Somewhat resembling the Willowtwig, having a remarkable hollow core like the Ortley, the hollow more open and concentric with the surface. Quality good, subacid with a brisk vinous and fresh flavor."

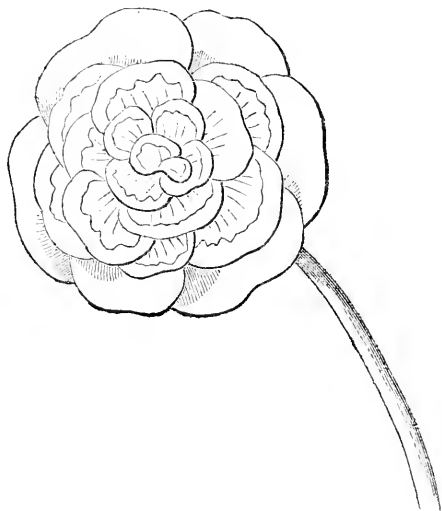
DUCHESS OF BUCCLEUCH GRAPE.—Mr. Thomson, gardener to his grace the Duke of Buccleuch, Dalkeith, sent not for competition, two bunches, from plants grown in pots of his seedling grape Duchess of Buccleuch. The bunches sent were 12 inches long, and each weighed 2½ lbs. They were not quite ripe, but evidently have a strong Frontignan aroma when quite ripe, and are of a pale amber color. We understand that it grows much larger when planted out, and is very free and hardy. It looks like a valuable grape. The judges awarded a Certificate of Merit.—*Gard. Chronicle's Report of Horticultural Society.*

NEW FOREIGN GRAPE BY MR. PAUL.—We have not yet got to the end of the New Grapes, for which, in the form of seedlings or foundlings, the last few years have been remarkable. Only the other day, at South Kensington. Mr. William Paul exhibited one which, so far as can be judged from cut fruit, promises to take the highest rank of merit. It has the Hamburg character of bunch and of berry, and something of the Hamburg flavor, but with this is combined most distinctly that of the Frontignans. It is described as a cross between the Hamburg and Frontignan, and this its peculiar flavor seems to confirm. The only drawback to this new grape is its color, which is of a rather reddish grizzly hue; but we suppose that after all the test of a grape lies in its flavor. Its large rich succulent berries will place it on a par with the Muscat Champion, or, as it was formerly called, the Champion Hamburg Muscat, which indeed it somewhat

resembles in its outward aspect. We believe this, like the variety just mentioned, originates in the north.—*Gardener's Chronicle*.

New or Rare Plants.

DOUBLE PANSY "GOOD GRACIOUS."—We have received from Mr. Peter Henderson flowers of this beautiful plant, which, with the annexed cut, we have before noticed in our journal. Though it has been flowering all summer, the blossoms sent were quite as large as the cut. It will, we are sure, have a popular run.



CLEMATIS JACKMANI.—This very beautiful hardy climber "originated at the Woking nursery of Messrs. C. Jackman & Son, and is, we believe, due to a happy idea which crossed the mind of Mr. G. Jackman, jr., which was to the effect that some of the blood of *C. lanuginosa* thrown into the large-flowered hardy species and varieties of this genus, would result in the production of something good. The result has fully justified Mr. Jackman's anticipations; for the seed thus obtained has yielded a large batch of magnificent seedlings, with flowers of all shades of purple, varying towards lilac on the one hand, and a reddish plum or maroon color on the other. One of the most marked of the whole series, so far as they have yet been proved, is *C. Jackmani*.

"The mother parent of this batch of seedlings was *C. lanuginosa*. This was crossed with *C. viticella Hendersoni* and *C. viticella atro-rubens*, from

which latter, no doubt, has been derived a rich reddish plum tint, which is found in many of the seedlings, and of which *C. rubro-violacea* is a beautiful example, scarcely, if at all, inferior to, and perfectly distinct from, *C. Jackmani*. The seedlings flowered for the first time in 1862, and both the varieties we have mentioned, selected from amongst them, were shown in August, 1863, at a meeting of the Floral Committee, and were both awarded first-class certificates. The seedlings are all remarkable for a lustrous richness of color, which greatly enhances their beauty.

"*C. Jackmani* has ovate leaflets of moderate size, and slightly hairy. The flowers, which open flat, are 4 or sometimes 5 inches across, and have a variable number of from four to six sepals, of a roundish-obovate form, terminating in a little point; downy behind, and on the face of an intense violet purple, the color being remarkable for its rich velvety appearance. The back of the sepals is marked by three ribs, which show like three slight furrows in front, the rest of the surface being veiny and somewhat rugose.

"*C. rubro-violacea*, to which allusion has been made, has the flowers of a rich reddish-tinted violet, and, when fresh opened, is almost maroon-colored, and very remarkable for its velvety surface.

"Being perfectly hardy, of free habit, and flowering abundantly during the summer months, these new hybrid Clematises of the Jackmans' are well worth a place wherever hardy-flowering climbers are cared for. We believe the two sorts to which we have alluded are to be sent out during the present autumn."—*Florist and Pomologist*.

THE September *Botanical Magazine* contains figures of the following plants:

MACLEANIA PULCHRA, a handsome glabrous evergreen shrub, said to be a native of New Grenada, and cultivated under the name of *Thibaudia floribunda*, with which it does not agree. It has elongated pendant branches, and glossy elliptical or oblong leaves, from whose axils proceed the aggregated pendant flowers, which are large and very handsome, tubular, bright scarlet tipped with yellow.

CYPRIPEDIUM CARICINUM, the pretty Peruvian Lady's Slipper, which has been exhibited during the summer by Mr. Veitch, under the provisional name of *Pearcii*, applied to it by Mr. Bateman. It however proves to be a plant previously described, from Bolivian specimens, under the name of *caricinum*. "Dr. Lindley's specific name happily designates the grassy or Sedge-like appearance of the plant, which in this respect, as well as in its long

creeping rhizome, is entirely unlike any other *Cypripedium* with which we are at present acquainted. It would be a *Selenipedium* if Prof. Reichenbach's genus of that name were accepted; but I quite agree with Dr. Lindley, that no sufficient case has yet been made for any such separation of the South American species from the rest of the *Cypripedia*." It seems probable that the plant will prefer cool treatment, and on account of its running rhizomes, it should have plenty of space. The leaves are narrow, leathery, and acute; the flowers, several on a scape, are pale yellowish green, the petals narrow, twisted, and deflexed, the orifice of the lip bordered by dark brown spots, and the sterile stamen fringed with dark hairs like a pair of moustaches.

GENETYLLIS FIMBRIATA.—A very elegant greenhouse shrub, with small obtusely elliptic decussate leaves, and terminal drooping flower-heads surrounded by a large bell-shaped involucre, which is of a lively rose-color, and fringed with short hairs. It is a South-west Australian plant, introduced by Mr. Veitch. "It will be observed that it is not the flowers which constitute the beauty of this plant, for they are small and insignificant, but the colored involucreal scales, resembling a large drooping bell-shaped flower."

Domestic Intelligence.

GRAPES—HOW MANY POUNDS CAN BE PRODUCED UPON AN ACRE.—One of our correspondents is alarmed at the statement recently made by Wm. S. Carpenter, about what it was possible to make an acre of grape-vines produce. The writer says that he has "figured up the yield at ten tons per acre, which, at 15c. per lb., makes \$3000," and he wants to know if such statements are not of the character of "a shot with a long bow." He thinks that the trustworthiness of the reports of the Farmers' Club will be injured by such statements. Let us see. There are 43,500 superficial feet in an acre. A vine trained to a single stake can be grown upon four feet of ground: say 10,000 vines per acre. At only two pounds per vine, the yield would be ten tons. Or, if the vines are planted at twice the above distance apart, or four feet each way, which is much more than is necessary, there would be 2,722 per acre. At 7½ lbs. per vine we should have 20 415 lbs. Grape-vines trained to single stakes will grow as closely as hills of Indian corn: say three feet apart each way, and we have 4,840 vines. It is not "shooting with a very long bow"

to estimate an average yield of 5 lbs. per vine, after the vineyard has attained its maturity, if it is well cared for. The members of this Club know vines standing thus near together, which averaged more than this the present year. But suppose upon such close planting as three feet apart we only estimate a yield of 2 lbs. per vine, and we shall have 9,680 lbs. upon an acre, and that, at only 10c. per lb., would give a better result than can be obtained from a crop of any kind of grain, deducting the expenses of each. Is the gentleman satisfied that Mr. Carpenter did not over estimate the quantity of grapes possible to be produced upon an acre? —*New-York Tribune*.

THE PURPLE-CANE RASPBERRY has proved too soft to send a long distance to market with certainty. It will sour in twenty-four hours, if boxed up close, should the weather prove hot. When it can reach the consumer in that time it will give good satisfaction.—*Exchange*.

[Is this general experience?—Ed. G. M.]

STORING CELERY.—We pursue two modes, and find both to answer completely. The first is to remove the celery to high and dry ground, dig a trench spade deep, stand up a row of plants, then three inches of soil, then another row, and so on until about half a dozen rows are finished, then commence another bed, and so on. The soil should be packed in firmly, and banked up, so that the tops of the celery are just covered, then spank off roof fashion to turn the rain. Over this two wide boards, nailed together, should be placed as a security against moisture—*For remember, it is water, not frost, as some say, that rots celery*. Frost adds to its tenderness.

Another plan is to sink barrels into the earth, so that the tops are two or three inches below the surface; stand them compactly full of celery, put close or tight covers upon them, and then a couple of inches of soil. By this mode, somewhat more troublesome than the other, ours kept well for the last two or three years, until all was consumed, which was late in spring.—*Germantown Telegraph*.

SUGAR FROM THE BUTTERNUT.—At the meeting of the Farmers' Club of the American Institute, New York, held April 19, among the subjects of discussion, we notice "Sugar from the Butternut-tree." The President, while discussing the matter of Maple sugar and its production, remarked, that as much sugar could be made from the Butternut-tree as from the Sugar Maple, and gave it as his

opinion, that the flavor of the former was preferable.

BLIGHT IN TREES.—During the present season a similar malady to the fire blight appears to have attacked evergreens. We observed it first in the Balsam Fir, where shoots only three or four inches long became affected during the excessive heat and drouth of the past summer. Specimens of some of the pines were sent us by S. Rhoades, Esq., of West Philadelphia, showing a similar result, the tip shoots being dead and the leaves a rusty brown. A fine specimen of the *Pinus excelsa* on our own grounds has mostly perished, the lower branches only remaining fresh: but the leaves have not been discolored as in the other instances, and it may not be precisely the same difficulty. Among several thousand pear trees growing within a short distance, not a single case of genuine fire blight has occurred this same season; although a few have perished by that peculiar disease of the roots which has been observed of late years. But, in the latter case, the leaves, instead of turning suddenly black, as in the genuine blight, have only withered and become light-brown, evidently in consequence of the mere lack of nourishment, the supply of which could not be obtained through the dead roots.

It is obvious that these appearances are more apt to be openly developed, (if not caused), during very hot weather, a system of training should be adopted that shall distribute foliage evenly through the head and prevent the sun from striking severely on any exposed portion. Succulent growth, it is well known, renders the tree more liable; and hence, on a good, dry soil of medium fertility, that shall prevent an excessive growth, but favor a healthy ripening of the wood of the shoots, the trees will be more likely to escape.—*C. Gentleman.*

A WINTER GARDEN.—A company in London has bought one hundred and forty acres a few miles from the city, and propose to enclose it with glass, making a climate like that of Madeira, with the fruits and foliage to be found in that isle. A hotel and residences are to be built, and great prices will be charged for a chance to live under glass.

FRUITS AT THE NEW YORK STATE FAIR.—The show of Grapes was better than at any former year, and among the contributors the name of C. F. Brehm, of Waterloo, who brought an admirable collection of native sorts, is worthy of mention. In addition to the more common native sorts, as the Delaware, Diana, Concord, Crevelling, etc., which

were finely grown, he showed beautiful specimens of the Iona and Israella. Several of the newer sorts among the different collections were examined with a great deal of interest by the fruit growers present—especially the Adirondac, Israella and Iona. These three sorts, and the Crevelling, were found nearly equal as to the degree of high quality, the Adirondac and Israella much resembling each other externally, and possessing considerable similarity in character, and they are probably not greatly apart in the season of ripening. The complete maturity of the Adirondac exhibited showed the high character of this excellent sort, greatly to the satisfaction of many tasters, and the fact that it has been fruited in different places from northern Vermont to Baltimore, and succeeded in each, is, so far, greatly in its favor. A new hybrid from Moore Bros., of Rochester, between the Diana and Ham-burg, was found to be of excellent quality, but has too much of the exotic character, it is feared, for general value. Another hybrid, a cross between the Diana and Delaware, was exhibited, said to be a productive and strong growing sort, and the quality, from an imperfect trial, appeared to be good. It must, of course, require years to be properly proved. It was exhibited by A. J. Caywood, of Ulster county. Bronson, Graves & Selover, of Geneva, presented an admirable collection of exotic and some native sorts.—*Country Gentleman.*

Foreign Intelligence.

STORING FRUITS.—To gather fruit at the right time, to preserve it in good order, and to ripen it properly, is an art in itself, and one for which considerable accommodation and convenience are indispensably necessary; and yet, strange to say, but no more strange than true, a structure properly adapted for the keeping of fruit is only occasionally to be met with. In many places we find the most wretched make shift for keeping fruit—a shed, cellar, or loft—the very opposite of those principles upon which a fruit-room should be built. In building a fruit-room, the principal points to be secured are a low uniform temperature, dryness, darkness, and means for thorough ventilation when required. The interior fittings should consist of boarded shelves and drawers. The boards for the shelves should be planed smoothly, and should be fitted close together. In most places it is usual to have the shelves made of narrow laths, with openings of an inch or more between, than which nothing can

be worse, as all the finer or tender-skinned Pears get marked by the sharp edges of the laths, and in consequence never look well when dished up. All fruit intended for keeping should be most carefully hand-picked. This is one of the most important points to be attended to, as the slightest bruise or injury is fatal to their keeping; and yet it is a too common practice, even when hand picked, to throw the fruit roughly into a basket, thereby seriously damaging a great portion of it. This is not perceived at the time, but after the fruit has been a short time in the fruit-room, the spawn of Fungi soon establishes itself on those parts of the fruit which were injured; decay takes place long before people are aware of it, and when discovered, they are astonished, and say fruit keeps badly, not thinking that they themselves are to blame. Fruit should always be handled with the greatest care and gentleness, and not thrown roughly from one basket into another, and then on to the fruit-room shelves. Some people make it a rule to gather the fruit at a stated time every year. This is a great mistake, as it is ready two or three weeks sooner some seasons than others. All fruit intended for immediate use, or that is fit soon after gathering, should remain on the trees until nearly ripe; but all fruit intended for late keeping should be gathered before ripening proceeds too far, as when fruit once arrives at the proper state of ripening, it begins to lose its quality, and ere long it will begin to decay naturally. Every sort should be gathered separately, and all the small, spotted, or shrivelled ones should be put aside; then the finer ones should be laid carefully on the shelves in single layers, if there be sufficient space for all the fruit; but, if not, the commoner sorts may at first be laid two or three or more layers deep, and as the earlier sorts are used, they can then be laid thinner. After the fruit is got into the fruit-room no light should be admitted, as it would cause the fruit to lose weight, and would accelerate maturity. Air should be admitted night and day until about the 1st of November; by that time the sweating of the fruit will to a great extent be over, and the house can be closed. The choicer kinds of Pears and Apples, after sweating, should be put, when quite dry, very carefully into the drawers. All the sorts should be properly labelled with the date when gathered, and the time they generally ripen at. The whole of the fruit should be carefully looked over every other day, and every fruit, the moment the slightest spot or sign of decay is perceived, should be removed, as, if allowed to remain to decay, the spawn of the fungus will spread in all directions, and settle on every one that

has the smallest speck of injury. During the whole of the winter months ventilation should only be had recourse to when absolutely necessary to carry off the exhalations or impurities that may be in the atmosphere. A uniform, steady, low temperature, with a dry atmosphere, should at all times be maintained, and the fruit should be handled or touched as little as possible. By attending carefully to these matters, I have never experienced the least difficulty in keeping Pears and Apples a long time in the best possible condition. Gathering the fruit carefully at the proper time; handling it as little as possible and with gentleness; keeping the atmosphere dry, and maintaining a low, steady, uniform temperature of about from 40° to 45°; looking over the fruit frequently and picking out any that show the slightest symptoms of decay the moment it is perceived;—these are the great points to be attended to, and when properly attended to they never fail to give the most satisfactory results.—M. SAUL, in *Florist and Pomologist*.

PENNA. HORTICULTURAL SOCIETY.

MONTHLY DISPLAY, SEPTEMBER 20.

The Society held no annual exhibition this year; but the usual monthly display was very fine, and made ample amends for its omission under all circumstances:

The Committee on Plants and Flowers awarded the following premiums:

For best Table Design, to F. O'Keefe, gardener to Joseph Harrison, Esq.

For best Basket of Cut Flowers, to P. Mackenzie & Son.

For Second best Basket of Cut Flowers, to F. O'Keefe.

For best pair Hand Bouquets, to D. McQueen.

For best Hanging Basket of Plants, to F. O'Keefe.

For best *Anechochilus*, 6 pots, to same.

For best 20 varieties Dahlias, to Robert Buist.

For best 10 Do. do., to D. McQueen.

For best 12 Variegated-leaf Plants, to E. R. Hibbert, gardener to Fairman Rogers, Esq.

For best 12 Ferns, to same.

For best 20 var. of Roses, cut flowers, to R. Scott.

The following Special prem. were also awarded:

For Collection of Plants, \$2, to E. R. Hibbert.

For specimen of Pampas Grass, \$2, to same.

For an *Oncidium papilio*, in bloom; also specimen *Platyceum grande*, \$1, to J. A. Boyd, gardener to D. R. King.

For specimen Hanging Basket of Plants, \$1, to Chas. P. Hayes.

For Collection of 6 Fuchsias, \$2 to D. McQueen.

For Collection of Gladiolus, \$1, to D. Fergusson.
For *Sonerilla margaritacea* superba, 2 large pots, \$2, to F. O'Keefe.

For Collection of 12 Lycopodiums, \$2, to same.

Was exhibited for the first time a beautiful specimen of "*Anectochilus Betton*," \$2, to same.

The Committee also are pleased to notice a fine collection of Verbenas, from J. W. Stewart; a fine assortment of Seedling Dahlias, from G. Schmitz; a fine collection of Cut Balsams, from D. McQueen, and a beautiful assortment of Double Dahlias, from R. Buist.

The Committee on Fruits awarded the following premiums:

For best Grapes, light-colored, grown under glass, 3 bunches, to Johns Hopkins, of Baltimore.

For best Grapes, dark-colored, grown under glass, 3 bunches, to R. Kilvington.

For best Native Grapes, 12 varieties, 1 bunch each, to Peter Raabe.

For best Native Grapes, 6 varieties, 2 bunches each, to J. McLaughlin, gardener to I. B. Baxter,

For best Peaches, one peck to T. T. Mather.

For best Pears, 12 varieties, 3 specimens each, to J. McLaughlin.

For best Pears, 6 varieties, 3 specimens each, to Wm. Parry.

They Committee also recommended the following special premiums:

For 2 bunches fine Black Damascus Grapes, \$1, to Johns Hopkins, of Baltimore.

For a fine Collection of Native Grapes, \$2, to T. T. Mather.

For fine Peaches, \$1, to J. McLaughlin.

For fine Butter Pears, \$2, to Mrs. Liggett.

For Collections of Apples, \$1 each, to Wm. Parry and S. W. Noble.

For fine Isabella Grapes, \$1, to A. L. Felton.

They also notice fine Duchess Pears and Quinces, from P. Mackenzie & Son; fine Bartlett Pears, Native Grapes and Peaches, from L. Chamberlain; fine Grapes and Kane Apples, exhibited by Chas. P. Hayes; and also notice favorably the Bartram Pear, exhibited for the third season, by Charles Harmar.

The Committee on Vegetables awarded the following premiums:

For best Collection, to A. L. Felton.

For best Collection, by an amateur, to William Howard, gardener to Girard College.

They also award the following special premiums:

For fine Celery, \$1, to William Howard.

For extra display of fine Vegetables, \$1, to A. L. Felton.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA

The semi-annual meeting of this society was held at Easton, on the last three days of September, in concert with the Pennsylvania State Fair. There was a good attendance of members present at the Fair; but the different calls on the attention of members rendered it difficult keeping them together for the sole purposes of the Fruit-growers Society; and we should judge the experiment of killing two birds with one stone, results in bagging rather small game.

Still everything passed off very usefully and pleasantly, and the members generally felt themselves very well repaid for their time and travel.

The route to Bethlehem from Philadelphia is over the North Pennsylvania Railroad, and is a very interesting one. Though very beautiful, it is not 'so very romantic' as to be unfit for agricultural purposes, as is so much of the beautiful portions of the State of Pennsylvania. But the agricultural character of the country is very much behind the age to the eye of the traveller. Very few young orchards, and the old ones planted in the time of General Jackson, fast going into decay. It is only a few years back since the country was opened up to modern improvement by the North Pennsylvania railroad going through the section,—and the changes made since that time are already perceptible. It is said that few if any of the inhabitants will vote for 'old Hickory' this fall, under the impression he is still living; and the tree agents report that they are having a 'lively time' among them in the way of tree orders for next spring. Along the line of the road nurseries are springing up. Leaving Philadelphia, we first pass near the nursery of Wm. Bright, then follows Haines & Hacker, at Cheltenham; Meehan & Wandell, at Wissahiccon; Alan W. Corson, at Plymouth; J. G. Youngken, at Richlandtown; C. B. Ott, Pleasant Valley; E. Ellsworth, Allentown; W. Johnston, Easton, and C. Davis, Phillipsburg, N. J.,—all at or near stations along the route to the meeting. These gentlemen will no doubt soon make this rich old desert (a sort of paradox) 'blossom like a rose,' and to this task we leave them.

The Grapes and Pears before the meeting were numerous and fine. Grapes that we think worth-

less seemed here at the top of the list,—while others we thought good cut but a sorry figure, and were intrinsically as poor. Some Taylor's Bullitt, which with us produce but a half dozen berries, were here exhibited in bunches as large as we have seen many Delawares—not quite ripe, however—it seems to be generally rather late. Cassady seems popular, judging by its frequent exhibition. To many tastes the musky odor is not disagreeable. Fanciers say they get used to the strong taste until they absolutely like it,—just as some get used to tobacco and other curious things. They say after getting accustomed to Delaware, Catawba, and such like delicious natives, they spit out Black Hamburg as so much poison, and will almost scramble for a Concord, or even a Northern Muscadine, and scarcely look in the struggle at a hothouse Muscat, however fine. Roger's Hybrids, as presented by one person, were almost unanimously pronounced very inferior, and an unfavorable impression of the whole race would have prevailed had not members eaten them so much better elsewhere. The Maxatawny, from the same locality, was miserable eating, while some Catawbas, Concorde, and Hartford Prolifics, from Pittsburg, came as near the perfection of native grape eating as we expect to experience for some time to come. We were more than ever convinced that the characters achieved by seedling fruits, through the exhibition of a few specimens of them here and there, amount to very little. An unfavorable decision need not ruin a fruit's good name,—nor should the gaining of a \$20 or even \$100 premium be considered as enough to elevate a variety to the highest pinnacle of Pomological glory.

The discussions were so broken and irregular, from causes we have referred to, that we cannot give them in as regular order as they occurred. The President's (Rufus A. Grider) address, was a happy and instructive effort. Labor, he said, was only a curse when unintelligently performed. When the scientific mind was brought to bear on the practical results of labor in fruit culture, labor became one of the pleasures of life. Knowledge was said to be power; but success was one of the best tests of the value of such power. Sound judgment was very rare,—whether the judgment made on practical results was sound or not could be usually tested by experience.

Horticulture elevated the mental and moral nature of man more than any other pursuit with all feeling continued thankfulness to the giver of all good for the abundant gratifications enjoyed.

He then alluded to the pleasures of society which

the love of horticulture brought about in kindred spirits,—of the value of fruits for the general health of man; and the importance of fruit-growing in a national and commercial point of view,—and concluded by giving as his opinion that the introduction of pure native wines would banish bad liquors from general use, and thus help the physical and moral condition of the community.

The Report of the General Fruit Committee was read, showing what fruits were at present popular through Eastern Pennsylvania. So many reports were in favor of the old Early Scarlet strawberry, that the society feared the adoption of the report would be an endorsement that there were no better fruits than those named, and in this instance voted almost unanimously to replace the Early Scarlet by the French's Seedling.

An interesting essay on the influence of fungi on vegetation, by Dr. Ezra Michener, the celebrated mycologist, was read, which we will give in full in a future number.

In the discussion on the destruction of insects, the thrip on the grape-vine received especial attention. It was the experience of several members that the plan Mr. Grider gave to the society in former years, was very successful. Torches were carried near the affected grape-vines in the night; an assistant shook the vines, and they all flew into the torch and were destroyed.

On preserving grapes for winter use, many members spoke of the plan of burying them, mixed with a few dry leaves, in boxes in the ground, beyond the reach of frost, as quite successful.

In the discussion on Strawberries, Lennig's White was mentioned as the type of good flavored strawberries, with some faults. Mr. Knox thought the Bioton Pine had all the merits of the Lennig's White, with some additional advantages. The Buffalo Seedling strawberry was considerably discussed,—the general opinion being that it was the same thing as Russell's Prolific.

The Report of the Committee on Nomenclature, which was referred to the National Pomological Society, for their action was called up. The Delegation to Rochester reported that they had performed their duty in presenting it to the proper officers of the society; but whether it was laid on the table, or under the table, the delegation could not say, as every effort on their part to get it called up for action on the part of the National Convention utterly failed. Much disappointment was expressed by many members; and it was resolved to act independently of the National Society, since its co-operation was practically withheld.



Very respectfully yrs.
M. D. Brinckli.

Drawn on Stone Expressly for the Gardener's Monthly

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Hints for December.



FLOWER-GARDEN AND PLEASURE-GROUND.

As the year 1864 is about closing on the gardener, it is pleasant to reflect that the future will probably be brighter than the past. War's alarms are opposed to successful gardening. Even to the parts of the Union most secure from war's irruptions, the gardener has staid his spade and his pruning-knife to read and study the latest news from the front; and many a crop has been delayed and rendered inferior in quantity and quality, because the husbandman was not up to time at the start.

Almost all—perhaps all evils have some good. In Horticulture as in Agriculture, one benefit of the past tempest is, that attention has been called to labor-saving machines and implements. Gardeners generally do not feel that they have the same interest in this subject as the farmer or market-gardener has,—but this is wrong.

A very large portion of the wealthy community are deterred from doing much at gardening, from a prevalent idea that it is very expensive. The gardener is apt to think as gardening is for pleasure, while farming is for profit, there is not the same necessity for consulting labor-saving ideas; but when it is clear that the more we cheapen necessary expenses, the larger the establishments can be made, it is clearly the interest of the gardener, as of the farmer, that the smallest means to the greatest ends, should be well studied by him.

One of the heaviest expenses is usually the care of a large lawn; but the horse lawn mower saves a great amount of manual labor. It should be used about every ten days, and the grass suffered to de-

cay where it falls, as practiced by Mr. Sargent. Many are deterred from using it by fear that much expense has to be endured in making a large lawn perfectly smooth, so that the machine can work. But it need not be broken up. Fine soil hauled on through the winter or early spring, and spread over the surface, so as to fill up the inequalities, and then heavily rolled in spring, will do as well. A little grass seed may be thrown over before rolling; but even this is unnecessary, as the natural grass will soon come through. Unless the surface soil is very shallow,—so much so as to dry out in summer time,—many lawns may be better made by this simple process than by breaking it up. As it is, the tough sod has crowded out the annual weeds; but when we break up old ground, the seeds of Ragweed, and other pernicious plants, germinate in the new ground, and give no end of trouble before a good lawn is obtained. The surface soil of a lawn, however, should be deep, or it will soon dry out in summer, and the lawn lose that fresh green which is the most desirable in the driest times.

A great many little things of this character can be studied out at this season of the year. Where there is nothing to add to a place, a few of the decorative portions of ones grounds may be slightly altered. Though one of the charms of a garden is the incessant variety caused by the growing changes of form and outline in the shrubs and trees, this may be often added to at a trifling expense by other changes.

It does not, in very many cases, require much time or money so to alter the appearance of a place as to make it bear a very different look to what it did in the past year. A new clump of cheap shrubbery may be planted, or an old one taken away to admit a new view that may have grown up since the original planting. A strip of grass may be laid down on what was once bare gravel. Here a small rockery may be put together; there a nest of roots thrown up, and ferns and trailing plants freely interspersed between them. In this corner you may place a stump, and entice ivy or some climbing

vines to grow over it—a rustic arbor may be formed in some inviting nook, and in another shade-enticing spot, a rustic chair or bench be fixed. Even the outlines of the flower-beds may be changed, or of the walks themselves, or even the contour of the surface in some instances, and all, in many cases, at the expense of a very small expenditure of time and money.

In all these undertakings, money, time, and vexation will be saved by consulting with men who make it their business to study such matters. Every one can, of course, design and lay out his own garden, just as well as he could make his own coat, or design the pattern of his own chandelier; but he will find in the end that his landscape gardener, his tailor, or his manufacturer of lamps, would have done the work much more satisfactorily for him. Many suffer from ill-fitting garments, and badly designed gardens, through employing botches and ignorant pretenders; but the man who has not tact enough to discriminate in this respect, deserves to suffer.

VINERIES.

At this season of the year, one of the most usual subjects of attention with many parties is the preparation of a vine border.

As to the width of the borders, we have always thought sixteen feet ample, and in cases where space was an object, we should be satisfied with much less; as, where the roots can be healthily maintained, good food can always be supplied. Indeed, ideas are fast changing in this respect. We well remember the time when it was universal to throw away a pot vine after the fruit had been cut; but now, modern practice will produce good grapes several years in succession, from vines in the same pots.

Where it can be effected, it is better to have the vine border run under the grapery as well as along on the front.

Where the soil lies naturally low, it is often judiciously the practice to elevate the border considerably above the surrounding surface, which effects much the same purpose as deep draining accomplishes so successfully.

Keeping in view, therefore, that the first essential of successful grape culture, is the production of an abundance of roots, and their healthy preservation afterwards, the first great principles of subsoiling and draining must be sedulously attended to. If the subsoil is retentive, a drain, at least three feet in depth should be made all around the proposed border, and should be led with a good fall

into the nearest outlet. A good warm subsoil is very important in grape culture, and draining is one of the best ways of securing it, as when the rain can readily penetrate through into the subsoil, the warmth at the surface in the spring is carried rapidly down into the soil, and is very advantageous at that growing season. Too much attention can scarcely be given to this matter. The drains may in part be constructed of bones, which will serve the double purpose of affording nutriment, and warming the soil at the same time.

It was once supposed that, as the vine is well known to be a gross feeder, the border at its formation could not well be too rich, and consequently when such an arrangement was in progress, all the dead horses, dogs, and animals that could be found for twenty miles round, brought very high premiums. But the practice has fallen into disrepute; not because it does not possess some merits, but because, like many other good things, it has been overdone.

As to soil, where choice can be had, we think there is nothing preferable to the surface of a pasture field, taken off, say two or three inches deep, and to have with every three loads of it, one load of stable manure, thoroughly decomposed—say two year's old hotbed manure incorporated with it. Any richer materials that may be at hand may be deposited at the outside of the borders. When the vines get older, and the roots strong and hungry, they will then find, and not despise whatever delicious morsels may thus be in store for them.

Very much of the success of your vine border will depend on the vines themselves: a statement which will appear paradoxical to many; but it is a fact, that so long as the plant remains healthy, and the roots push actively and vigorously, the soil of a grape border can scarcely be too rich, and it is only when, from whatever cause the vine becomes unhealthy, and the roots diseased, that a highly nutritious border adds to the injury and makes the matter worse. Hence, the danger of too rich a border in the hands of the inexperienced, and the and the value of caution on the part of all in making a new experiment.

With regard to pruning the vine, it must not be forgotten, that what is done at this season is with the object of making the plant push with greater vigor next season; looking forward also to the future shape and form that such pruning will cause the vine to assume.

Many prefer to have always a good succession of young canes, as bearing wood. The old wood is cut away every year entirely to a new cane which has

been carefully trained up from the base during the summer, is now made to replace the old shoot; but this kind of pruning has to be attended to in the summer season more particularly, and need not be further referred to at this time, except to see that the cane is shortened down somewhat, according to its strength; usually being suffered to occupy about two-thirds of the rafter.

Those who prefer very large bunches, and who dislike to have their vineries crowded with 'wood' during the summer, usually train up a single cane to the rafter, which is ever after retained permanently there; and the side shoots, which spring out yearly, and bear fruit, are annually shortened in to one eye at this season, and push again, and again bear the next.

There are many modifications of these two systems of training and pruning, all with various advantages, and with their several champions, which those who aim at perfection would do well to study, and to which there are several interesting volumes specially devoted.

PLANT HOUSES.

Since the introduction of so many plants interesting for their forms or color of their foliage, the plant house is quite another affair to the idea our forefathers had of it. The *Colus Verschaffeltii*, one of the introductions of the few past years, is now in 'every hand.' Begonias in great variety, Tradescantias, Tillandsias, Marantas, Caladiums, Amaranthus, Cissus, with some ferns with colored foliage, afford a good field for choice. These plants want the warmest part of the plant house—in fact, do not keep well over the winter, where the temperature falls below 60° or 55°. In almost all greenhouses, however, it will add much to keep the temperature about that, as it insures a continuous flowering of many things through the season; and makes something more of them than mere storehouses for housing over summer bedding plants.

Pelargoniums become 'drawn,' spindly, and worthless, if they are not allowed to occupy the lightest and most airy part of the house. If fine specimens are desired, the shoots should now be tied down to the surface of the pots and pinched off so as to induce them to shoot freely; but a too frequent use of the 'finger and thumb' is bad,—nothing renders a *Pelargonium* weaker; rather encourage them to grow bushy, by the free use of light, air, and manure-water.

A good supply of young *Fuchsias* should be coming on now—re-pot as their roots fill each pot,

let them not want for moisture or light; do not pinch off their tops, but let them grow rapidly. The temperature in which they are grown should not exceed 55°. A turfy loam, moderately enriched with well-decayed manure, and well drained with charcoal, suits them admirably.

The *Minulus* is receiving more attention than it has been. Where they are grown, they are much improved by having pans of water kept under their pots.

Epiphyllums, as they continue to flower, will require the warmest part of the house, and a fair supply of moisture.

The most interesting tribe of plants at this season of the year is undoubtedly the *Camellia*. The buds frequently drop off before flowering; this may spring from three causes—from the plants being kept too dry, or from the drainage being bad, whereby the soil becomes soddens, or from the house being kept too warm by insufficient ventilation. As the leaf-buds burst, the plants are benefited by occasional syringings; and, indeed, an increased supply of water altogether, in order to accommodate the demands of the young growth.

Cinerarias will soon be the chief attraction; the least frost kills them, yet they will not do well if kept in a high temperature. They love moisture, yet are very impatient of damp. No plant is more improved by the use of charcoal in potting than this.

The *Calceolaria* will require the same conditions as the *Cineraria*.

Hyacinths that have been out of doors, or in any reserve place for protection, may be brought in a few weeks before wanted; they should not have much heat, light or moisture for a few days, and then only gradually.

Carnations and *Pinks* are much admired when grown in pots and flowered there early; they do not flower well if much warmth be given, but the usual temperature of the greenhouse will bring them forward a month before they can be had out of doors; whenever the roots make their appearance through the bottom of the pots, they should be shifted into a size larger. They require very little water and love the light, and whatever manures are used to enrich the soil should be thoroughly rotten. The *Pansy*, on the other hand, delights in half rotten, strawy manure and turfy loam. If a quantity of seedlings have been raised in the fall, they will require potting this month; they do not flower well here when the weather becomes warm; but when grown in pots, and forwarded slightly by the aid of a cool frame, they do very well.

Cacti, and *succulent* plants generally will scarcely require water at all, unless in very dry situations, and then receive but a slight sprinkling with a syringe. The rule, 'when you water a plant at all, let it soak right through,' does not, by any means, hold good with these plants, if there be not some other good exceptions.

Oranges and *Lemons* will require the coolest part of the house, and to receive no more water than will just keep them fresh.

Communications.

LETTER FROM VIRGINIA.

BY OLIVER TAYLOR, OF LOUDON COUNTY.

DEAR MONTHLY: I see by your last issue, that I have received, that some concern is manifested as to what has become of the non-resistant Horticulturist of this part of Dixie (as some would call it). Let those who care for me, or for the cause of Horticulture, know that I am still at my old home, and as deeply interested as ever in the sublime art of producing those truly beautiful and delicious products that should claim a deeper hold on the affections of our people than they do; yes, even to the casting out of all the vile lust after the flesh diet that is so fraught with disease and premature decay; for be it known, I am a thorough vegetarian of the strictest school, and therefore love all the fruits and vegetables with my entire nature.

We have had a very dry summer here, with some rain the early part of the autumn, but not enough to wet the ground sufficient to dig trees yet. As it was so dry all summer. I surely thought the apples would be small and imperfect, but such was not the case, for in this and the valley next us, so far as I can learn, the apple crop is very fair, indeed I have never seen such good apples here as there is this year; and I think one cause of their being so fine is the abundance of small birds that have increased since the sportsmen have gone to the war. I used to think it was a good practice to have hogs run in an orchard to eat up the fallen fruit; but I now believe the destruction the hogs cause to the small birds is of more injury than the benefit resulting from their eating the fallen fruit.

Our hot dry summer has so ripened the winter fruit that it will not keep long. The first frost we had this fall was a freeze on the 9th of this month, so severe as to freeze the grapes solid on the vines, and even kill the box edging and cabbage leaves quite dead, so that they turned white in a few days. The like I never knew before.

I see many persons speak well of the Roger's Hybrid grapes, and as I had nearly the first lot of them that was sent out, and the first that came so far south, I feel as if I ought to say how they do here; and to be candid, I must say that I am somewhat disappointed in one particular. Not a single fault have I to find with many of them as to their quality as ripened in our hot sun, they are good enough for any one to eat; nor do the vines suffer in the least from our winters, but they do fail to hold their leaves and fruit as we desire them: for out of 30 varieties, not one of them was perfect in both particulars this season, though every variety managed to make a part of a crop. Probably with different treatment they might do better other years. The Ontario held its leaves and fruit to perfection; and such bunches, ripening just at the time of the freeze: but oh, if they only had the good taste of Roger's No. 4, 34, 33, or 14! It is simply a big juicy grape, with but little aroma or sugar in it. The Delaware, Clinton, Purple Favorite, Lenoir, Franklin, and Taylor, are all the varieties that seem to defy our summer changes about the time the grapes are half grown.

The letter of a querist to me, for a recipe to make Grape Marmalade, was not sent to the proper office, so I did not get it in due time, but I will give it here for his benefit:—Cook the grapes until the skins and seeds can be easily taken out by mashing the pulp through a sieve, and then mix from one-third to one-half cooked and mashed apples, to make it as thick as is desired, and then heat them together and put up air tight, cooking of course until no more froth will rise on the surface when it is boiling. If the grapes are not sweet, nor the apples either, they will need some sugar to suit most tastes. If the Clinton grape, well ripened, is used with the Paradise apple, no one with any thing like a natural taste will wish sugar in it.

We were too tightly blockaded about the time of the Pomological Congress to send, or we would gladly have done our part. Do tell us all about it, and put us in the way to get the proceedings in full.

HYBERNATION OF INSECTS. AND ITS RELATIONS TO HORTICULTURE.

BY PROFESSOR S. S. RATHVON, LANCASTER, PA.
Read before *Pennsylvania Hort. Society*, Sept. 6, '64.

[Concluded from page 334.]

Perhaps a still larger portion of the insect world hibernate in the *pupa* state, especially those species that produce but a single brood during the year. These, as soon as they have completed their larval periods, invariably either spin themselves in

a cocoon, or burrow into the ground and form a sort of earthy cavity, corresponding to a cocoon, and undergo their pupal transformations therein, where they, for the most part, remain entirely torpid until the return of the warm season, when they become active again, and in due time make their appearance in a perfect state. It is very rarely that the larva of any of these insects are found after the decay of the vegetation upon which they are accustomed to feed; and if any of them should happen to be retarded in their larval development beyond the usual season, they are sure to perish before they can effect their pupal change. Exceptions may be made in favor of those that bore into wood, and that often require from two to five years to complete their larval development; but these are never found out of the wood, and pass several hibernating seasons, as before alluded to, in speaking of hibernating larvæ.

These cocoons in various forms, from the most perfect to the most simple construction, and from the finest and most delicate fibre to the coarsest shaggiest hair that covers their bodies, may be found in various situations, and are plainly visible during the winter season, when vegetation is denuded of its foliage. On the trunks and branches of trees and shrubbery: on the undersides of fence-rails, or in cavities, post-holes and under the bark of old rails or trees; in old outhouses and unfinished attics, and in short, any locality, in the nooks and corners of which the least protection is afforded, these cocoons may be found, each one containing the pupa of some male or female destructive species of *Lepidoptera*. Bear distinctly in remembrance that all Lepidopterous insects (moths and butterflies) are destructive in the larva state; with but few exceptions, all feeding upon some kind of vegetation. The pupæ of butterflies are never found in a cocoon; but the naked chrysalis, in similar situations to those before mentioned, may be seen suspended, either vertically or at various angles during the winter, and no amount of frost or cold and rain seems to have any effect upon them, for, as soon as the warm weather approaches, these pupa cells are found deserted, and their winter inmates in beautifully improved forms and colors, are gaily flitting from flower to flower, imbibing nectar, and laying the foundations of new destructive broods.

Of those species that go into the ground to pass their pupal period, many are exposed to view through winter digging and plowing, and from various other incidental causes; but of those that live exclusively in wood, few are seen in their pupa states, and for

this reason their destruction is more difficult than others. Still, there are numbers of them that may be met with in cutting up old wood, splitting rails, and turning old logs. In all those accessible situations in which the pupa are found, there is but one suggestion to be made to the farmer, the gardener, and the fruit-grower, and that is, to destroy every pupa they can lay their hands on, by any means within their reach, and not to let a single one knowingly escape. This is the only safe course, and if more attention was paid to the destruction of the *ova* the *larva* and the *pupa*, states of total or partial inactivity,—there would be less to do in warding off the injurious attacks of the *imago*, when they deposit their eggs and provide for the perpetuation of their species, because, these, being endowed with all the capacities of instinct, strategy and escape that they ever attain, they also possess the greater facilities for eluding the vigilance of their own enemies.

Too much must not be left to the operations of either artificial or natural remedies for the destruction of noxious insects in any of their states; and the sooner horticulturists and gardeners realize that the greatest amount of success in this respect,—or that the most effective remedy consists in their own vigilance, and their own persevering manual efforts, the sooner a most important work in this behalf will be accomplished.

Entomologists, in their occasional excursions into the country during the winter season, in search of cocoons and pupæ, seldom fail in gathering a goodly harvest of them. This same vigilance, as a part of the fixed business of agriculture, horticulture and gardening, during such seasons of the year in which labor of other kinds is not pressing, would amply reward all the time bestowed upon it, and might be performed 'between times,' by women, youth and children.

I now come to consider the hibernation of insects in their perfect or *imago* states, and to which condition the term *hibernation* most properly belongs. More of these mature insects survive the winter than we in our limited philosophy have ever dreamed of. True some, indeed many of these hibernating survivors are harmless, or belong decidedly to the list of our insect friends; but the larger number perhaps, are more or less noxious. Among the *Coleoptera*, I have reason to believe, that thousands, yea, tens of thousands, and perhaps millions of those little striped beetles, commonly called the "Cucumber bug," (*Diabrotica vittata*), survive the winter in a state of hibernation. I have often found this insect in large numbers late in autumn,

and on one particular occasion, on a very warm day in the month of November, I found a plant that had escaped the frosts, in a protected place, literally covered with them, and nearly every leaf upon it destroyed. Now this insect usually attacks and destroys the young cucumber, squash, pumpkin, and melon vines early in the season; and after the middle of June, not many of them are seen at one place. After this period they deposit their eggs and then die, and the young brood is hatched therefrom, pass their larval and pupal periods during the summer, in situations not so fully exposed to view as the operations of the mature insect. Indeed, the economy of this insect in all its stages of development, is not yet fully manifest. Some observers assert that the eggs are deposited in the ground, and that the young grubs feed upon the roots of succulent vegetation; and some that they are deposited on the vegetation upon which the mature insects feed. This latter theory is more in accordance with my own experience, in regard to the the "Galerucans" in general, which includes several other genera to which this is nearly allied. But I am at present more particularly discussing the subject of their hibernation, which may in some measure account for their sudden appearance in the spring, when the young melon and cucumber plants are just above the ground. The plant, on the special occasion to which I have above alluded, was growing beside a large stump, in a field fully a mile from any vegetable garden; and under the bark of this stump, on its southern or sunny side, I also found hundreds of these insects. A few of these insects, with their relatives, the spotted "Cucumber-bugs," (*Diabrotica 12-punctata*), may be found upon vegetation all summer; but it is only during the winter season, and in the spring of the year, that they are found congregated in such large numbers as we sometimes see them. There are also various species of the genus *Haltica*, (small leaping beetles), and assimilating genera, to which the cucumber beetles are also allied, including the somewhat notorious "Turnip-flea," (not Turnip-fly), that are usually found on the same kinds of vegetation, and in winter in a hibernating state, in like situations and circumstances. All these, together with various species of *Coccinella* and *Hippodamia*, commonly called "Lady-birds," I have found in great numbers from October to April, in a hibernating condition, beneath the bark of old trees, timbers, rails, and in clefts, and also under stones and logs, and other places affording protection against the influence of rains and snows. Such nooks and corners as these afford safe hiding places

for many noxious hibernating insects; and there is a grave question, whether the agriculturist, the horticulturist, and the gardener, ought not to direct a part of the effective energies and means under his control, to explorations of such places during certain seasons of the year, and to the capture and destruction of all such winter stragglers as he does not positively know to be insect friends. The vigilance of children might be directed in that channel of research, and there is not a doubt that in the end it would bring its reward. While insects are in a torpid condition during autumn, winter and spring, they are easily captured and destroyed. Crushing insects in a torpid condition is the most effectual way of destroying them. We do not always accomplish this by merely throwing them into water, unless it is 'boiling hot.' It is said that the attention of Rev. Wm. Kirby, a distinguished English entomologist, was first directed to the economies of insects from the fact of his having immersed a species of *Coccinella* in alcohol for twelve hours, and then, on exposing it to the sun, it revived again and flew away.

To prevent Cucumber beetles and Turnip fleas from destroying young plants, English gardeners recommend a strong decoction of wormwood, or pulverized chalk, or road dust, strewn on the leaves when they are wet with dew or rain, as unfailing remedies,—simple enough to elicit a trial.

Some species of the *Curculiæ*, a large family of *Coleopterous* insects, are also found during autumn, winter and spring, in a hibernating state, not in very great numbers, however—perhaps only isolated females for the most part, intent upon the continuation of their immediate families in a succeeding season. As these insects are nearly all carnivorous and prey upon other insects and insect larva, it is not necessary to give them any thing more than a passing allusion, and to suggest to all cultivators of the soil the necessity of making themselves acquainted with the forms and economies of insects, in order that they may be enabled to distinguish between the beneficial and the hurtful, when they chance to see them.

A large number of the *Curculionidæ* are also hibernating insects, and I have on various occasions found many of them during the winter months, under stones, and timbers, but more particularly under the bark of dead trees, from early autumn to late spring. Some of these, in the larva state, are known to prey on wood, but many are found in such situations, that are known to be destructive to grain, fruit, and nuts, including the famous "Plum-weevil." One of our very largest species in the North-

ern States, *Ithicus curculionides*, a grayish insect of about three-quarters of an inch in length, hibernates, and in the spring makes its appearance about the time the apple and peach buds are beginning to swell. These buds then become the food of these insects; and in some localities they have been known to be very injurious to the trees, especially in the States of Ohio, Indiana and Illinois. This insect has been detected in committing the same depredations in the county of Lancaster, in this State.

The genus *Sphenophorus* includes a large number of species (some sixty or seventy) that have already been described, and the greater portion of these, perhaps all of them, may be found in a hibernating state during the winter.

My observations upon the notorious "Curculio," (*Conotrochelus nenuphar*) have led me to the conclusion that it passes the entire winter in a state of hibernation, and that there is more than one brood produced in a year. For instance, the larva or worms that are found in ripe cherries and plums of various kinds, in the months of July, August, and the beginning of September, are of a different brood from those we find in the same fruit in May, and the early part of June. Under my own observation, the Curculio has left the plum fruit and gone into the ground as early as the 10th of June, and before the 1st of July the perfect insect came forth from the pupa—just in time to deposit its eggs in the ripe cherries, and a little later, also in the plums and apples. Now, it cannot be supposed that these insects would lie in the earth during all the hot summer, or from the 10th of June in one year until the month of May in the next, and then only come forth to deposit their eggs in the young plums, cherries and apples. The second brood is not as injurious as the first brood, simply because they have a wider field of operation—the fruit is more advanced; the small fruits, such as cherries, may be gathered before they can be attacked; and also because there are other substances that afford sustenance to the larva of the "Curculio,"—the soft and spongy excrescences or "knots," so abundant on some fruit trees, for instance. It is this second brood, without a doubt, that survives the winter in a hibernating state, most likely in the earth, where they undergo their pupal change. Two or three very warm days in succession in the winter would naturally reanimate them and bring them out, and then, on a sudden change of temperature, again they would resume their torpid condition under the loose bark and stones, or any other place that could be appro-

priated for the purpose of secretion and protection.

Some of the *Lamellicornia*, a family of Coleoptera to which the "dung beetles," and the spotted "grape beetle" belong, are also hibernating insects, especially the genera *Aphodius* and *Geotrupes*. Millions of the former may be found in the excrements of cattle throughout entire fields; and when the weather becomes extremely cold they descend a little distance into the earth, but come up again when the temperature becomes warmer, and occupy their favorite substance in nature, upon which they feed. In only ordinarily cold weather, they do not go into the ground; and during such times I have found them in all of the winter months. They are about the first Coleopterous insects that come forth from their hibernating state in spring, and during warm days in the months of February and March I have seen the air full of them. There is nothing however, connected with the economy of these insects that need necessarily excite the special apprehension of the cultivator, for the best experience seems to have demonstrated that they, and many of their cogeners, are rather beneficial than hurtful to his labors, whatever may be the character of other genera and species, belonging to the same great family.

Of the Hemipterous insects, which includes many very noxious suctorial kinds, there are a large number of species that pass the winter in a state of hibernation. Some of these Hemiptera are predaceous, and feed upon other insects; but it is rather remarkable that few or none of these are hibernating insects, and therefore the cultivator commits no error in destroying all he may come in contact with at any season of the year. It may be useful here to attend in a special manner to an individual belonging to this Order, that is well known to the vegetable gardener, and is one of the worst enemies to the squash and melon vines that he has to contend with,—I mean the "Squash bug," or *Coreus tristis* of naturalists. Nearly all insects have one or more enemies that prey upon them in some manner, but this particular species is so offensive and so loathsome, that no other animal will approach it for the purpose of feeding upon it. I have found this insect during every winter month, as well as in early spring and late autumn, hidden in all kinds of nooks and corners that sheltered it from rain and moisture. It can stand any amount of cold or hot weather, provided it is dry, but cannot stand the exposure to wetness or moisture, especially not in the winter. I entertain such a strong aversion to this insect, founded upon early recollections of its pestilential character, that I have been long ac-

customed to destroy it, whenever or wherever I may find it; and although I am far from taking any delight in cruelty, yet candor compels me to confess that I feel a certain degree of pleasure when I know that I have made the number of them even *one* less in the world. It would, I think, pay the gardener if he were to institute a careful and thorough search for these insects during the warm days that we sometimes have in December, January, February and March; for, if two or three such days occur in succession, it is sure to revive these insects, and cause them to crawl out of their hiding places, in order to bask in the warm sun. These hibernating winter survivors among the "Squash-bugs" are nearly all females, maturing a matrix full of eggs, which they intend to deposit on the underside of the pumpkin or squash leaf, as soon as it is large enough to sustain its brood. But it is not content with this, for when there has also been a male survivor, there will be a series of reimpregnations and redeposits of eggs, until succeeding broods have reached the adult state, and are in a condition to continue the work begun by these winter survivors. The "Squash-bug" is the typical representative of a large family (*Pentatomidae*) of Hemipterous insects, all of which are injurious in a greater or less degree to vegetation, and nearly all of which may be found in a hibernating state during the winter season. But the sub-family, *Coreidae*, of which the Squash-bug is the *immediate* type, contains a greater number of destructive species than any other group or family in the whole order, and they also produce and reproduce larger broods. The genus *Capsus* includes many small destructive species, one in particular (*Capsus (Phytocorus) lineolaris*) which is very injurious to young trees in nurseries early in the spring, before ordinary vegetation has been much advanced. When the buds of young fruit trees begin to swell in the month of April, and sometimes in March, I have known these insects to emerge from their winter quarters, where they had been for months in a torpid condition, in millions; and on one occasion, within the space of ten days, they destroyed nearly the one-half of the young pear, apple, plum, and cherry trees in a pretty large nursery; but they seemed to be partial to the pear. These insects are suctorial, and do not destroy the buds of trees in the same manner as the large species of *Curculio*, to which I have alluded in another place in this essay. That insect is *mandibulated*, and *gnaws* away the bud, which it appropriates by mastication; but the little insects now immediately under consideration are *costellated*, and only *suck* out the sap or juices of

the bud, but effectually destroy its vitality,—a bud attacked by these insects rarely ever recovers, but those attacked by the *curculio* often do. The *Capsus* makes one perforation after another with its sharp proboscis, sucking out the juices of each, until it leaves the bud as porous as a sponge and entirely destroyed. This is the same insect to which has been attributed the causes of the *Potato-rot*, by a gentleman in the State of New York. Nothing, it appears to me, can be farther from the truth, for the economies of these insects are such as to render the thing impossible, in the manner that Mr. Henderson describes. I think I have answered his arguments effectually on this subject in the Vol. I., p. 5, *Farmer and Gardener*. Still, as I do not profess a monopoly of the knowledge on this subject, there is plenty of room for investigation, and I am widely open to rational conviction.

It is rather remarkable that the hibernating *predaceous* species belonging to the order *Hemiptera* should be so few in number. Most of these insects deposit their eggs on different objects in the autumn, where they remain all winter, and are hatched by the warm sun of early summer. The economy of one particular species of this group is so remarkable, that I cannot refrain from mentioning it here, although it may seem to be foreign to the general tenor of this essay. I allude to a large and tolerably well known species, the *Prionotus novenarius*, formerly included in the genus *Reduvius*. This insect is purely carnivorous in its habits, feeding upon various other species of insects, and on that account ought to be protected rather than injured. The mature insects are always found solitary or in pairs, and for a long time I was puzzled to know how the young insect was provided for, or whether it might not be herbivorous in its infant or immature state. After a series of observations, some of them made in my own room whilst the insects were confined, and others, made out in the open air, whilst the insects were at liberty, enables me to come to the following conclusion:—The female *Prionotus* deposits her eggs during the month of September, sometimes as late as the first of October, usually on the lower sides of rails, limbs or beams, where they remain until the end of May, or beginning of June, in the following year. In a warm room, on one occasion, the young were brought forth prematurely during of March; and on this occasion I was enabled, from personal observation, to confirm my theory in reference to them. About one hundred were thus brought out, and immediately the stronger commenced a cannibalizing war upon the weaker. On every visit to them I found one or

more of the weaker ones spitted by the stronger, who seemed to be enjoying their repast with the greatest satisfaction. There appeared still room for doubt in the minds of some, owing to the fact that my insects were confined, without having access to any other kind of food; but my theory has been amply corroborated by the same thing taking place in the garden of Mr. J. Stauffer, of this city, where they have been visited daily. Mr. S. counted one hundred and twenty of the young insects in this brood, when they first evolved from the egg state; and, at our last visit, the number was reduced to less than fifty, and if we had not witnessed the operation, we might have supposed the dead carcasses lying beneath the colony of living ones, were only their cast off skins after moulting. These insects, then, are gregarious until they are half grown, and feed during their infant and juvenile states upon their own kind. Thus, until they acquire the necessary strength and strategy to capture their prey from among other insects, they unsuspectingly, but as a matter of course, and also very playfully and seemingly innocently, seize one of their brethren at the first opportunity, and make a repast of him; and he, appearing to acquiesce in this extraordinary domestic arrangement for the welfare of the family, makes no effort to escape or ward of the blow aimed at his life, but yields without a struggle to his fate. If it were not for some such domestic arrangement as this, it would be difficult to perceive how the large family, during the infancy of its members, could be sustained, for they are apparently too slow, feeble and awkward to capture any thing else than one of their own awkward kind. For this purpose they do not wander away from the spot that gave them birth until they have acquired sufficient size and strength to provide for themselves, but remain in a group, and are constantly engaged in efforts to entrap each other, and their manœvering for this purpose is sometimes absolutely comic.

After this, I hope pardonable, digression, I resume the thread of my discourse upon the subject of insect hybernation. A large number of the *Hymenopterous* insects are of this character, a well-known example of which is the common honey-bee. Others, both solitary and gregarious, and known under the common names of "tailor-bees," "mason-bees," "carpenter-bees," "mud-wasps," "hornets," "yellow-jackets," "wasps," &c., all pass the winter in a complete state of hybernation, and the new colonies that are founded in the following spring are perhaps the work, in the beginning, of a single female survivor. But as there are few of

these insects that do much damage to vegetation, and a large number of them are classed among our insect friends, it is hardly necessary to give them any thing more than this passing notice.

Perhaps there is no order of insects that contain so many parasitic species as that of the *Hymenoptera*; and these parasites are the great balancers of the insect realm, where their action is not interfered with by human counteractions; for, not only many other insects, but also their eggs or embryos, have one or more kinds of these parasites, which prey upon them. Many of these parasitic insects hybernate during the winter in the perfect state, but more of them perhaps as larva and pupa in the bodies of other insects. Those that are parasitic upon the bodies of *Lepidoptera* must for the most part hybernate, as I have found them in the middle of winter; and there seems no other way of accounting for the continuance of their species. True, there are large species belonging to the genus *Trogus* that are parasitic on the bodies of the larva of *Papilio*, that hybernate, as a larva or pupa, within the pupa of the latter insect; but those that are parasitic upon the larva of *Sphingidæ* would be utterly destroyed if they did not hybernate in the perfect state. The relations of these insects to the vegetable world, and to the interests of horticulturists, are just as important as if they were their enemies, for until the balances or counterchecks within the economies of nature themselves are perfectly understood and appreciated, there always will be an overestimation, and an unnecessary amount of anxiety, in regard to insect depredations.

I have not attempted in this essay to *enumerate* the different species of hybernating insects, nor to give their generic or specific characters, but only to mention a few common species in the most prominent *orders*, as an illustration of this and other arrangements in the insect world, for the continuance of their kind. Hundreds, yea thousands of them, pass the winter season in mud or in water; but the habits of these are not *directly* connected with the interests of horticulture, although *indirectly* some of them are, and conspicuous among these are the Dragon-flies, who destroy an immense number of moths, butterflies, and other progenitors of noxious insect larvæ. Nor have I attempted to suggest any *certain* remedy for the extermination of insects, other than that which consists in a simultaneous and continuous manual effort on the part of all farmers, gardeners and fruit-growers. It is not necessary, perhaps, that even *all* noxious insects should be destroyed in order to secure the interests of the cultivator, but only that a preponderance of

them should be prevented. In conclusion, allow me to remark that all that is *necessary* to be done, *can* be done, if a *will* is found to do it. If certain measures will keep ten feet square clean of insects, the same means multiplied will be as effectual in ten acres or any larger amount.

INDISCRETION IN POT CULTURE.

BY CHRONICLER.

Within the past eighteen months, we have witnessed the pernicious effects of two cases of indiscreet manuring in pot culture. In one case, a hundred foreign grape-vines, worth two dollars each, were repotted into larger pots. After taking them out of the pots the exhausted soil was removed from their roots, which greatly lessened the balls. In the large pots an inch and a half of compost was put in the bottom, and four inches of slaughter-house offal cut fine was put above it, and that was covered with two inches of compost, and the plants set on top. Compost was then filled in and pressed down, leaving an inch on top to hold water; the whole was then plunged in the inside border of a large grapery. This was all done in December; and after the grapery was heated with fire in March, these vines started into growth at the same time as the trained vines, but when the leaves were half out they all turned brown and withered up. A month after that, our opinion was asked. The answer was, that our predictions of last December, that the decomposition of the animal matter would destroy the roots and kill the vines, had been verified. One pot was taken up and emptied: the offal was a complete jelly, and mixed with the compost run out like soft soap, filling the whole place with a stench. The others were then emptied out, and the roots were found to be severely charred and as brittle as scorched reed; and the stems were black in the heart for a foot high. The whole of the injured parts were cut off, the cuttings planted in good compost, and all were again plunged into the border. Many of the cuttings grew, but none of them were near so large in the fall as other cuttings planted the fall before. It may be proper to state, that the man who did the re-potting *was not a gardener*, but did as he was commanded: his employer attached no blame to him.

In another instance, an Orange and a Lemon tree, large plants, were shifted into larger tubs. When the tubs were more than half full, four gallons of blood from a slaughter-house was put in each tub, and four inches of compost above it, leaving two inches on top for holding water. They

were then set under a grape-vine, at the end of June, during very hot weather. In a fortnight the stench became so disagreeable that the trees had to be moved a distance from the house, and was put under the shade of a tree. In two weeks after that the leaves and young shoots were withered and dry. We were sent for to doctor the patients; and upon learning all the circumstances, we condemned the use of blood. The tubs were emptied, and both them and the root balls of the trees were scrubbed with broom and water, and left exposed four hours for the effluvia to escape. The trees were then planted in the tubs with well prepared compost, a year old; were then heavily watered, and the stems and branches were moistened with water by syringing them evenings and mornings, so as to soften the bark and assist the trees to push out new buds more readily. At the end of another fortnight we found their collars covered with small fungii, such as is seen on decaying wood; in scraping them off, the bark parted from the wood as freely as that of boiled willows: vegetation was gone. It is two months since, and the trees still stand in the tubs dead. The operator in this case was a gardener, and although he remonstrated against the use of blood, when it was brought to him, he was tartly ordered to do as he was told; but when the effects of the folly were seen, the poor gardener was censured.

A VISIT TO MR. HENDERSON'S NEW HOUSES.

BY PETER B. MEAD.

Having learned that Mr. Peter Henderson's new houses were now in working order, I determined to visit them at the first leisure moment. This I have now done; and I think a brief description of what I saw will interest many of your readers, especially those engaged in the propagation of plants.

It is well known that for many years Mr. Henderson occupied a piece of low but fertile ground in Jersey City; but one morning he woke up and found a 'City Street' making a 'raid' right through the middle of his grounds, and threatening the demolition of all his houses. 'City Streets' generally do things 'regardless of consequences.' Perceiving the folly of resistance, Mr. Henderson wisely concluded to retreat, and fortify himself in a position more secure from the invasions of a foe who has so little regard for the beautiful in nature, or the stability of horticultural improvement; and here we found him, already firmly intrenched in his new

position, with a line of fortifications that bid defiance for ages to come.

The new grounds of Mr. Henderson are located in Vreeland Street, South Bergen, and command an extensive view of New York Bay and the Narrows. The place may be reached in less than half an hour by the horse cars from Jersey City ferry.

A plan of Mr. Henderson's houses having already been given in the *Monthly*, much detail will not be needed. My chief object is to call attention to them as substantial and economical houses for nursery purposes. The range is quite extensive. One of the first features that catch the eye on approaching the place is a brick building 250 feet long, built in the most substantial manner. On going within, we find provision made for horses and wagons, packing, boiler pits, office, &c., each in its proper place, and all conveniently arranged. This building runs east and west. On its south side, and at right angles with it, the plant-houses are built, each one opening into this main building, which, while it subserves the purposes above-named, also affords a thorough shelter for the plant-houses and adjacent grounds. The plant-houses are 14 in number, and 100 feet long, and from 11 to 18 feet wide. They are built upon the 'ridge and furrow' principle, and stand in groups of three, except the propagating-houses, which stand detached, and occupy the center. The 'ridge and furrow' principle presents many points of economy, which will readily suggest themselves. The roofs are low and flat, as they should be. Being narrow, a single sash reaches from ridge to furrow, and ventilation can be commanded to any amount. The water from the roofs is conveyed to three capacious cisterns, in addition to which there are three wells, insuring a good supply of water at all times.

The labor of watering the plants, which, Mr. Henderson informed me, occupied the time of four men in his old houses, will here be reduced one-half by the use of West's Force-pumps, three of which are employed, placed at intervals of 50 feet, at the south end of the houses, and to which a hose is attached, leading to tanks in the center of each house. The arrangement is convenient, and promises much economy of labor.

The heating is done by five of Hitching's largest boilers. One is devoted to the two propagating houses in the center, and the others to the six houses on either side of them: two to each six; the two in both cases being connected, so that, as Mr. Henderson said, it will only be necessary to fire one boiler in mild weather to heat six houses, each 100 feet long, and containing in all 2500 feet of four

inch pipe. Boilers of that size ought, in my opinion, to heat such houses as Mr. Henderson's without calling in the aid of reserves; and I shall be surprised to hear that he has had occasion to use more than one of each set during the winter. In case of accident, however, there is a great advantage in having two boilers connected, especially in an establishment like this, capable of growing nearly half a million of bedding plants a year. By means of cut-offs, each house can be heated independently.

The propagating houses, always objects of interest, are now in full operation, making those 'stubby' little plants for which Mr. Henderson has become famous. These houses have all the 'modern improvements,' including hot-water tanks, the best of all modes for furnishing bottom heat. Instead of a return flow in the tanks, the water is conducted back through a four inch pipe running along the side of the walk. This secures a moderate outside heat when the tanks are covered. It will no doubt at times be greater than is desirable, but it can always be controlled by the abundant means of ventilation at command. But I hear a host of voices crying, "Don't these tanks leak?" Perhaps you may find a 'bead' or two, if you look sharp: but if they were filled with 'Old Bourbon,' you would have to wait a month or two before you caught enough to get drunk on. Notwithstanding all that has been said against tanks (mostly by those who have not used them), they possess advantages, when properly built, that commend them strongly to all who grow plants. They have their place; and in that place there is nothing better, and few things as good.

I should like to describe these houses more in detail, for they are models of economy in their way; but as Mr. Henderson has already described them in part, it seems hardly fair to trespass further on your space. I will, therefore, close by wishing that Mr. Henderson's old friends may find him out in his new quarters, and shower favors upon him more abundantly than ever.

NOTES ON GRAPES.

BY A. HUIDEKOPER, MEADVILLE, PA.

In the September number I promised you some further notes on Grapes, at the end of the season. Our autumnal frosts have held off longer and been lighter than usual, and out-door grapes have had as good a chance to ripen as they will probably ever get. Vines have suffered less from mildew than usual, and, fruit, so far as I have noticed it, has

been sound and good. I notice in brief such varieties as have come under my observation :

Delaware—fruited well and colored well. In some gardens it was very small in berry and cluster, but in others obtained to what I suppose to be its best size. I consider it our best out-door grape as yet for the table ; but it is very much sweeter under glass than in the open air.

Concord, *Hartford Prolific*, and *Clinton*, ripened thoroughly and well ; they may all do for wine grapes, but we need better varieties for eating, as they grow here.

Diana—ripened some of its clusters, but not all. It is a rampant grower, but does not ripen its wood well ; the fruit is sweet with a tough skin, and it ought to be a good grape where it gets a few weeks more of sunshine than it does here. I think it likely it may do better either on limestone, or on poorer soils than it does on our deep clay.

Union Village.—Some specimens of this left me by a friend were well ripened, and better for eating than the Concord or Hartford Prolific.

Taylor's Bullitt.—Some specimens of this (if genuine) were small and not well ripened at the end of the season.

Early York (or *Franklin*?).—From a large vine of this variety, I gave fruit to some children to sell for the soldiers, from which they realized \$6 ; from another portion of its fruit seven gallons of juice were expressed, and a good supply of fruit for home and neighborly use is still left on the vine. It is apparently but a good variety of our wild frost grape, having a thin skin, and being free from foxiness. It is very hardy, always sure to ripen, and a much better grape for eating than the Clinton, but it will not keep after being gathered.

Burton's Early.—This, a large, very early and very foxy kind of a grape, dropping its fruit as soon as it is well colored. Though the earliest of all the grapes I have named, I reject it, and do not think it worth the room it will occupy in any garden.

GRAPES IN THE VINERY.

Under glass I have been much annoyed again this year with the thrip. I will give \$50 towards making up a purse for any one who will give directions for getting rid of this pest without injury to the fruit. It seems to do no injury until the fruit begins to color, when its numbers rapidly multiply and the foliage is much injured by it. Tobacco smoke, though it annoys it, does not destroy it, and to apply Tobacco smoke in sufficient quantity and with sufficient power to kill the insect, would, I think, affect the flavor of the fruit. Earlier in the season one can apply syringing and smoking with

good results, but the enemy presents itself in force only when these remedies cannot well be applied. By the time the fruit has been cut, the insect burrows in the ground, and is beyond the reach of such applications. I tried an experiment with charcoal this summer, to see if I could suffocate it, but did not succeed. Either from the experiment, or from a sudden change from protracted dry hot weather to cool nights and very wet weather, several of the vines ripened their leaves prematurely, and the Hamburgs, though larger and better grown than usual, did not color as they should do, many of the clusters not getting beyond a purplish red, which no good cultivator should be satisfied with, even if the fruit be sweet and palatable. I give comments on sundry varieties :

Golden Chasselas, *Sweetwater*, and *Pitmaston White Cluster*.—These grapes, as I have them, hardly amount to varieties. They are similar in cluster and size, and all become amber and very sweet when fully ripe, and mature about the same time, occasionally one showing an advantage over the others in ripening, owing to the condition and treatment of the vine the preceding year. The Golden Chasselas seems to be the most yellow of the three, and all of them this season gave me entire satisfaction.

Red Chasselas—ripened very well, the berries not quite all of an even color, but flesh sound and good.

Muscat Hamburg.—A young vine ripened a few clusters of fruit, sweet, juicy, and of first quality. I think, however, the vine has some Frontignac sap in its vessels, and that it will exhibit its tendency to shrivel.

Golden Hamburg.—This is a rampant grower, and one of the best vines to bear I know of ; fruit and clusters very large. Its quality this season was not equal to what it was last, when it was a very sweet grape. It has but little pulp, being all made up of skin, juice and seeds. If there is any country where it will grow out of doors, it ought to be one of the most prolific of all wine grapes, though it might not be equal to some others in quality. It produced fifty pounds of fruit this season on a three year old vine ; and possibly the cultivator ought to be blamed rather than the vine, when I rate it a little lower this year than I did last.

Buckland Sweetwater.—proved a good sized, fair late ripening white grape, of good appearance and quality,—intermediate, if there be such a class, between first and second quality.

Muscat Torroni—very sweet and nicely masked, firm, and not transparent enough to be a handsome

grape. It ripens late, and with me this year, did not keep well. Fruit of medium size, and not handsome enough to be popular.

Grosse Coulard.—This so resembles the Child's Superb that last year I thought them to be identical. A difference in the manner of blossoming this season induces a contrary belief. Clusters irregular, but fruit good size, white, transparent, early, and this season very good.

Canadian Chief.—Last year very sweet, this season watery and insipid.

White Hamburg—large cluster, green color; too late in ripening for a cold vinery.

Mr. Hobbs, with whom originated the grape "North America," has tested a good many varieties in this region this year, and I suppose will be his own reporter.

While the fumes of sulphur under solar heat (not ignited) is of great value as an antidote for mildew, the efficacy of sulphur as a repeller of insects is very much exaggerated. Bees may be suffocated with burning sulphur; but it is about time that such cheap advice as that of mixing sulphur with the whitewash of graperies to annoy insects, should be abandoned. Such application does no harm, and may be useful for a different purpose; but the insects that annoy the horticulturist are unfortunately made of sterner stuff than the recipe implies.

DECIDUOUS FLOWERING TREES, SHRUBS, VINES AND CREEPERS.

BY WALTER ELDER, PHILADELPHIA.

We admire trees for their noble stature and grand proportions; we love shrubbery for its neat habits, lovely flowers, fruits, and delightful fragrance; and we need flowering vines to clothe our terraces, arbors, pillars, and unsightly buildings: It will be our purpose to note some of the more choice of each.

During the whole year some are in bloom or in fruit. Among trees, no sooner does frost leave the ground than *Forsythia* is clothed with its yellow blooms, and *Daphne Mezereum* with its sweet-scented purple bloom. *Cydonia japonica* soon follows: one with shining scarlet and another with pinkish white blooms; then *Spiraea Reevesii* and *prunifolia*, clothed with their flowers of spotless white. *Magnolia purpurea* shines with her purple cups. *Libus* of numerous varieties. *Viburnum opulus* with flower-balls of white. *Calycanthus floridus*, with its fragrant brown blooms; *Lonicera tartarica*, flowers pink and white and *Corchorus japonica* with yellow blooms.

Among shrubs, *Deutzia scabra*, literally covered

with scalloped flowers of white; *Wegelia rosea*, with racemes of rose and pink bell-shaped flowers; *Laburnum*, flowers orange yellow; *Dirca palustris*, a miniature tree, thirty inches tall, with yellow flowers; *Berberis*, with golden-tasseled blooms and highly fragrant. *Crataegus*, with Hawthorn blossoms; *Chionanthus*, with fringe-like peduncles; *Amygdalis nana*, one with pink and another with white double-peach-like flowers, are among the earliest to bloom. *Robinia hispida*, with racemes of rose; *Privet*, with white blossoms; *Rhus cotinus*, with blooms resembling a light cloud, and *Hibiscus*, with double Hollyhock-like flowers.

The above continue a constant bloom from March till end of August, when the fruiting kinds show to advantage. The red and white *Snowberry*, and the *Euonymus* or Strawberry-tree, loaded with their scarlet fruit; the *Sorbus* or Rowan-tree, crowned with shining scarlet berries. All of these three genera retain their fruit fresh till midwinter.

Among flowering vines and creepers, *Wistaria sinensis* blooms early in spring, and is the most beautiful of all vines, it requires a sunny aspect; *Yellow Jasmine* shows its blooms all winter, and makes a thick covering in spring. Honeysuckles follow—the *Chinese* is the most profuse in flowering, and retains its foliage all winter; the *Japanese* is also an evergreen of thrifty growth, and is suitable for pillars, walls, etc., as it branches close to the ground; the *Coral* is universally known. *Clematis flammula* is of beautiful and thrifty growth, producing a profusion of star-like white blooms in July and August; *Virginica* is of rampant growth with whitish blooms in great profusion; there are many other varieties of large-flowering kinds, which do not grow above six feet high, yet they are beautiful and greatly admired. *Jasminum officinalis* produces beautiful sweet-scented white flowers; *Periploca graeca* or Virgin-silk vine, is of rapid growth but has but little beauty; *Ampelopsis* or Virginia-creeper, is a rapid grower and creeps up walls and clings to them, the leaves get a red tint in fall, but fall off by frost. *Bignonia* or Trumpet-vine, grows upon walls, and produces a profusion of Trumpet-like flowers. *Ivy*, the Irish and Scotch species are most common, and the best; they grow upon walls and have beautiful shining foliage, which remains green all winter; the Irish is the prettiest, but the Scotch takes a firmer hold of walls, and is not so apt to be torn off by snows in winter.

The above are but a few of the choice ornamental trees, shrubs and vines in cultivation, but if only these were properly selected and planted, they would add beauty to every homestead or pleasure-ground.

The Gardener's Monthly.

PHILADELPHIA, DECEMBER, 1864.

✉ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOR, Box Philadelphia."

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PUBLISHER'S NOTICE.

December is our campaign month. We trust our friends will do their best to make the paper known to non-subscribers interested in horticulture. If, in forwarding subscriptions, the names of parties to whom it might be to our interest to send specimen numbers be furnished us at the same time, we should be much obliged.

In respect to SUBSCRIPTIONS, our friends will please remember that we act on the principle of *not forcing our journal on any one. It is sent to no one longer than they subscribe for it.* This relieves all of any delicacy about stopping it, if they do not like it,—and gives us much pleasure to reflect that our entire list of readers are with us heart and hand, and do not take it "*only that they do not like to stop it.*" Our plan has some annoyances. Some friends whom we know value the *Monthly* exceedingly, forget our plan, and knowing that we know they value it, feel hurt at not receiving it until it is convenient for them to send their subscriptions; and sometimes withhold their names nearly the whole year in consequence. When they remember how essential it is for the guidance of clerks, and all parties in an establishment like ours, that rules should be strictly adhered to, it is at once seen that no disrespect is intended.

Our subscription will be *Two Dollars a year, strictly in advance*; a raise which the great advance of every thing connected with printing renders imperatively necessary; but we shall resist, we hope, as successfully as we have done, all temptations to lessen the number of pages, enlarge the type, give poor paper, or any other popular scheme of diminishing the *quantity or quality* of the matter of the *Monthly*,—we rather hope, with the assistance of the friends of horticulture, to add to its attractions and enhance its value.

The increased numbers of new subscribers, especially during the last half of the present year, en-

courages us to believe that we are supplying a demand for horticultural knowledge; and trusting to a continuance of the friendly interest which has ever been manifested in our behalf, we boldly enter on our career for 1865.

The December number is our *best campaign document*. The index takes room, and the frontispiece absorbs all the lesser *illustrations* for this month,—but the index itself will furnish the best evidence of the *Monthly's* usefulness; being, as a correspondent in the present number not inaptly terms it, a "*Dictionary of Gardening.*"

FIRE BLIGHT.

It is to our mind a clear case that fire blight is caused by excessive heat or cold, acting on imperfectly organized wood. What we see and call fire blight, is but the end of the life struggle in trees previously diseased.

It is rare indeed to see fire blight in an old or well established tree. If it once escape the perils of barbarous or mistaken views of training or cultivation during its young days, it will give you no cause of concern for its health or productiveness when it arrives at a mature tree's estate. This is evident in whatever part of the Union we turn to investigate. In Western New York particularly, where the fire blight is said to rage so fearfully among nursery trees, the old ones, where they are not troubled with too kind a system of culture, are models of health and productiveness. Indeed, we have been accustomed to look on Pennsylvania, Maryland and New Jersey, as peculiarly the American Pear district; but in all our extensive travels through these States, we have seldom seen such perfect living pictures of what healthy pear trees ought to be, as the old trees that grow in the grassy spots and lawns about Rochester gardens. This is the more striking when compared with the *garden* trees, grown in ground highly enriched, and kept continually stirred and rooted about in the same town. The trees generally live but a very few years. To keep up a specimen Pear orchard, it is necessary to have a reserve ground, from which to transplant trees as fast as the main specimens die; and even from the nursery rows, thousands of trees are annually taken to the funeral pile, which the Molock of high culture demands as its yearly sacrifice. Has it never occurred to those who look on fire blight as some inscrutable mystery, to ask themselves why those old, and in some sense 'neglected,' trees should so entirely escape disease, while these pampered children of luxury are yielding up their youth-

ful lives in such alarming numbers to the destroying angel?

The observations of those who would not at first agree with our views, confirm them. "You are wrong, sir, in your notion," said a friend in the East recently to us, "for the blight is connected only with certain varieties. Like the cracking of the Butter Pear, it has become part of the nature of some varieties to blight. Our Bartlett's and Buffums give us great trouble,—but we never see it on Seckel, Winter Nelis, Lawrence and some others." But we have seen all these kinds blight, and especially in grounds where "six inches of good stable manure" was considered the sum of all good in Pear culture. These latter varieties usually ripen their wood early and well. Such wood will never have the fire blight. Show us trees that grow late,—that have strong sappy, spongy shoots, and it will not be long before you may show us fire blight also.

Now the way in which gouty growth turns to fire blight, to end its days, is simply this:—To go back at the beginning, we may remark, that vitality is always weakest towards the pith, and strongest at the bark. When old age lays its wrinkled hand on a tree, the pith first goes, then the 'heart wood,' and at last the 'sap wood,' until we finally get to the 'hollow tree,' wherein is no life except the bark, and the wood of immediately preceding years. In very hot or cold weather, when evaporation is excessive, the tree and its various parts has need of all the moisture it can draw up through to its surface. When the whole trunk of a tree is alive and sound, there are millions of cells engaged in this good work; but when the half perhaps of what ought to labor are unequal to the task, the healthy ones break down under their excessive work, and the parts nearest dependent on their supply die away at once, and sometimes even the whole tree.

That this is really the case, can readily be tested by experiment. Cut away a portion of a tree subject to fire blight, and the pith of the tree will be found blackened, and frequently two or three of the annual concentric rings of wood nearest to the pith will be found quite dead also. The tree gets along very well by its thin layer of live bark and wood till the warm or dry weather begins, when the parts give out,—the weakest spots in the bark or branches going first.

To the experienced horticulturist this phenomenon is not confined to the Pear. He finds it frequently amongst half hardy trees and shrubs, and hardy ones that happen to have extra strong or late

growths. Very frequently in the Rose he finds strong shoots that have apparently stood several years uninjured, suddenly die while the flower-buds are bursting, under a hot June sun; on cutting the shoot through, he finds, as we have described, the pith and inner wood had been killed by the severe winter's frost, leaving alive only the bark and the nearest circle of wood, on which the severe evaporation was too much for its life, and it went the 'way of all flesh.' We might cite many such instances, but this is enough for our purpose.

The great fault of all our ideas of cultivation is, that we look too much towards mere growth. Vigorous growth is not health. On the contrary, vigorous growth is the parent of numerous diseases of which this fire blight is but one of a hundred forms. We battled against it almost alone,—and though still fighting on the same ground, but with the gratification of finding ourselves splendidly supported, we regret to find some few esteemed friends still pursuing the path that leads to destruction.

The chief leaders of Horticultural opinions, however, are fast recording themselves against the great digging and manuring system. In our last we gave Dr. Lindley's review of the new English edition of River's work, and what he says of high cultivation we reprint here. It will be seen that the opinions of the Physiologist in the *Chronicle* tally exactly with those of the Gardener in the *Monthly*:

"Root-pruning and biennial removal are the most essential features of Mr. River's plan, and from the moderate size of the trees, cannot be regarded as obstacles in the way of carrying it out. Their purport is to make and keep the trees healthy and fruitful by ensuring that *their roots shall be kept near the surface within the influence of the sun and air. The ground over the roots of garden trees is too commonly dug once or twice a year and cropped, so that every surface fibre is destroyed, and the larger roots are driven downwards, with the certain result of imbibing crude watery sap, and developing a too surely fatal luxuriance—fatal because the wood scarcely ever ripens as it should do.*"

One more word for the public ear. So long as you will have fine 'thrifty,' 'vigorous,' 'splendidly grown trees,' the nurseryman's duty is to prepare them for you. You prefer a two years old Pear tree, six feet high, to one the same age four feet. If Brown has not got them, you will go to Smith. B. must therefore get what you want, or go out of the business. You must not blame the nurseryman for selling you a puffed up tree. It is your own choice. If he advise you to take the four feet tree, possibly you may think he wants to close out his scrub. It is

dangerous for him to advise you. He wisely thinks as the shoemaker did, who, when he reminded his customer that he had not yet taken the measure for his boots, and was told in reply, "never to mind, of course I want them as big as I can get them for the money," that it was none of his business if they did blister his heels after he had wore them.

PORTRAIT OF DR. W. D. BRINCKLE.

As a frontispiece to the present volume, we give a lithograph of the distinguished pomologist, Dr. W. D. Brincklé.

An extended notice of this lamented gentleman will be unnecessary here, in view of the beautiful tribute to his memory from the pen of Dr. Gardette, published in our magazine at the time of his death.

Brincklé's Orange Raspberry, one of his own productions, first gave the great impetus to Raspberry cultivation, that has since resulted in so many improved kinds, and the immense number of superior American fruits, particularly Pears, that he was mainly instrumental in bringing to public notice, will cause his name to fill a prominent place in the annals of American pomology for many years to come.

One of the last of his introductions to the public before his death, was the Maxatawney grape, which he authoritatively named, and described in our pages a couple of years prior to his decease. Up to his last moments he was devoted to his favorite pursuit. We had the pleasure of spending a day with him but a few weeks before he died. His room was filled with specimens of fruits from many quarters, sent for his inspection and judgment,—and his greatest pleasure was to guide his friends, while by their assistance led, through his seedlings and cherished trees. One of his pears, the Wilmington, he considered would be the one with which his name would be the most lastingly connected by his fellow countrymen,—although two newer seedlings he had not yet described, he thought might perhaps equal it. These, he informed us, he should give us sketches of in some future number of the *Monthly*, dedicating them in some way to his friends Wilder and Buist, of whose long and enduring friendship he spoke in the most feeling terms. He died before he had accomplished this task; but we trust some of his friends will complete it for him, and in the way he wished it.

As one of the oldest of American Pomologists, who have been conspicuous in bringing fruit knowledge so near to a science, as we now find it,—the

portrait, we are sure, will be a welcome present to all our subscribers.

THE GREELEY GRAPE PRIZE.

In our last we made some remarks on the way public opinion is manufactured for the support of new seedling fruits,—and, as illustrating what we had to say, reference was made to a recent case: the Iona grape and the Greeley prize. We repeat here what we then said, that we have nothing to say against Dr. Grant, or his way of doing business. Advertising is an art which few people understand; and the Doctor is fairly entitled to all the pecuniary profit his cleverness in that line obtains for him. If he can use the press or the public to his own advantage,—so long as he honestly believes he is giving them a dollar's worth for a dollar, it is the public's own fault if they think they are getting ten dollar's worth for the one dollar spent.

We did not think our readers were getting this 'ten dollar's worth' in the way of the *testimonials* to the Iona and Israella, although we are satisfied that the 'dollar's worth for the dollar,' may be all right, for the Iona is no doubt a strong competitor with a well-ripened Catawba, as far as the solitary opportunity we have had of judging enables us to say; and further developments show that in the matter of the Greeley prize, the award is fast becoming a good joke.

In another column we give the latest card. Dr. Grant having "very generously" consented that the competition shall remain open for other grape-growers to exhibit specimens of other varieties of grapes, to compete with the Iona, grape-growers are invited to present their fruit for the inspection of the judges, at one of the exhibitions, to be held at the rooms of the American Institute, on the first Tuesdays of November, December, JANUARY, and FEBRUARY.

If the premium were offered for the best mode of preserving grapes,—or for the best grapes when preserved,—or for the best raisins, there might be some propriety in the renewed offer. As it is, the whole thing is a muddle.

When we wrote before, we knew not who were the committee. Their names are now appended, and prove to be gentlemen for whom we have personally the highest regard. They have probably got bewildered by an honest enthusiasm. We do not envy the share of responsibility requested to be undertaken by Mr. Charles Downing, or friend W. L. Ferris, for we are quite sure Dr. Grant will have another 'rod in pickle' for them similar to his

last,—just strong enough to ease his own conscience in case he is hard pressed; while he will no doubt use a portion of their report, as heretofore, to get what the report justly or unjustly entitles him to from the public.

Scraps and Queries.

☞ Communications for this department must reach the Editor on or before the 10th of the month.

☞ The Editor cannot answer letters for this department privately.

VINEYARDS.—*F. D. R., Hamilton, O.*—I propose the coming season, to plant 3 acres in grapes. Being a novice, will you please answer in your next number the following queries:

1. What varieties to plant?

[Clinton for wine, Concord for market, with a few Hartford Prolific, and a few Delawares for those who will pay a good price for good fruit and good wine.]

2. How far apart in the row, or how many vines are required to plant an acre?

[One vine to every 8 feet square.]

3. Is it necessary to trench the soil, or can I not make it deep enough with a common two-horse plow, followed by a subsoil plow?

[The subsoil plowing would do.]

4. The soil is a tenacious clay. Is it suitable and would you advise me to underdrain it?

[Unless the slope is great enough to run off the water, it is best to underdrain.]

5. With good culture, how many pounds of grapes can I probably raise to the vine?

[25 pounds per year on an average.]

6. The site is a southeastern slope 450 feet above the Great Miami river, but not so steep as to wash off the soil when it rains. I have about 300 Catawba vines in bearing, which produced beautiful grapes the past season, not at all affected by mildew or rot.

[If they do well, you could not have a much better grape.]

KILMARNOCK WILLOW.—*H. P. S., New York.*—Is the Kilmarnock Willow naturally dwarf, or is it made so by propagating on a dwarf stock? If naturally dwarf, is it smallest when growing on its own roots or otherwise? What height does it grow on its own roots?

[This kind is a variety of the *Salix caprea* or Goat Willow, found at Kilmarnock, in Scotland. The original species is a very strong and upright grower,

attaining, when full grown, 15 or 20 feet. The weeping variety will not grow tall on its own roots, unless a central shoot is trained to a stake. The stock it is usually worked on is the original species, *S. caprea*.]

ROGER'S HYBRID GRAPE.—Our plate last month by some perversity of the types, had "No. 15" beneath it, instead of No. 4, as the text called for. All our readers, no doubt, saw the error; but they will please mark it correctly for future reference. Why do people send out new fruits under numbers?

BEGONIAS AND WHERE THEY COME FROM.—Some months ago a correspondent asked us to give in the *Monthly* some account of the origin of the beautiful Begonias that adorn our stoves. The question was too extensive an one to give an immediate reply to; and even now the answer is not perhaps as complete as may be desired.

Although Begonias have long been one of the most ornamental classes of Stove plants, the one that first called marked attention to it was *B. rex*,—this was introduced in 1857, by Linden, of Brussels, from Assam in the East Indies. *B. Griffithii* was, however, introduced a year or two earlier from Bhotan, also in the East Indies. From these two a great number of hybrids have been obtained: almost all the large-leaved varieties belonging to this race. The yellow species, *B. Xanthina*, is however somewhat mixed in with this class of hybrids. This was introduced from Otacamond, in Bhotan, about 1852. The *B. Lazuli* is a hybrid, with the last named for one of its parents, also the one figured in Hooker's *Botanical Magazine* (plate 5102) as *B. pictifolia*, but which we have not seen in cultivation.

Since those introductions, many of the species long in cultivation have been used to produce hybrid races. The *B. cinnabarina*, native of Bolivia and the Cordilleras of South America, is no doubt one of the parents of *B. Prestoniensis*, some say between that and *B. nitida*. *B. nitida* itself is a very old kind, introduced from Jamaica nearly a century ago. *B. manicata*, the variety with the singular appendages like manicles around the leaf stalk, is from Vera Cruz, in Mexico, on mountains 3000 feet above the sea level. It can be traced in some of the hybrids. The beautiful American variety, *B. Feastii*, has for one of its parents *B. hydrocotylifolia*, another Mexican species. *B. Sandersii* is a variety we have not been able to trace; but it is probably a cross between *B. nitida* and *B. fuchsoides*, the latter a beautiful and distinct kind,

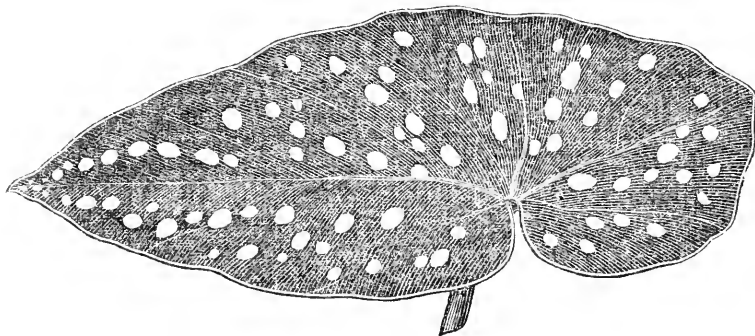
sent by Purdie some twenty years ago, from New Grenada. Our readers do not know, perhaps, that this popular favorite is described in some catalogues under the musical name of *Tittlebachia fuchsoides*.

The small waxy white-flowered one, known in cultivation as *B. parviflora*, though its correct name is *B. Dregoi*, is a native of the eastern part of Southern Africa. There are several varieties, probably hybrids, known.

B. incarnata, another old and popular kind, comes from Mexico, near Xalapa. In its native country, an allied species, *B. gracilis*, of Kunth, gives as much trouble to botanists by its numerous variations, as the hybrids do in our greenhouses,—we have not seen it, however, in cultivation, but it would be worth introducing, if not already done, as it would no doubt 'sport' into many interesting forms. The little dwarf *B. rubrovenia*, from Sikim and Bhotan, has been extensively used in hy-

bridizing with *B. Xanthina*. *B. Evansiana*, well known as the 'Beef-steak plant,' and hardy in many situations, is a native of China and Japan; we are not sure that it has been employed in hybridizing, but it is worth trial as a hardy race of beautiful forms might be obtained. *B. angularis* was introduced from Brazil in 1845, and is incorrectly called *B. zebra*, although the leaves are not always Zebra striped.

In addition to those we have alluded to as probably the parents of hybrids, there are a few interesting ones that do not seem so far to claim any such influence, and yet have very interesting foliage, or are otherwise beautiful. A very common one is *B. maculata*, called also in some collections, *B. argyrostigma*. The leaves are long and deep green, profusely covered with silvery spots. This is a Brazilian species, growing about Rio de Janeiro, and of which the engraving is an illustration



The *B. heracleifolia* from Eastern Mexico, with large divided leaves like a Cow parsnip, and numerous small pink flowers. This seems to sport readily, for Paxton figures one as variety *punctata*; Lemaire one as *longipila*, and Hooker another as *nigricans*,—the last, however, not the same as the variety (probably of *Xanthina*) grown in gardens as *Begonia nigrescens*.

B. sanguinea, a strong-growing, large blood-leaved variety, from Brazil.

There are a few others, as the common white sweet-scented *B. semperflorens*, but these we have named are all of interest so far as introduced into American gardens,—a poor representation, considering that there are over 350 species of *Begonias* known to Botanists.

COOKING THE HUBBARD SQUASH.—"Mr. Editor: You have heard of the great devotion of the Mahometans to their Koran. When at the sacking of Alexandria, some one besought the mussel-

man conqueror to spare the magnificent library of the town, the Grand Turk replied, that if the books contained aught not in the Koran it must be false, and they should be destroyed; and if they had nothing more than what the Koran taught, they then were worthless,—and I may say, I have had something of the same sort of veneration for the *Monthly*. When any one has asked me what is the best work on the Strawberry? I have said 'Get the *Monthly*.' The best Grape book? still the same answer, "Get the *Monthly*." But, sir, you have found if not brought me into trouble at last. Says my wife to me last week, "Abner, I should like to know the best way to cook Hubbard Squash?" Says I, Priscilla, dear, if you will look in the *Gardener's Monthly*, you will find it. The index of the past five volumes is a complete Dictionary of Gardening." A pitying look,—were she not my wife I should have said contemptuous look; but she is too good for such feelings,—taught me I had made some mistake. She merely said, "You think I do

not read the *Monthly*. I know it almost by heart, and I am sure there is nothing of cooking Hubbard Squash in any volume." I took out the set, and soon pointed to page 77 Vol. I., in the Index for "Hubbard Squash;" but, alas, for my short-lived triumph,—it was only to give a history of this 'delicious vegetable,' as the paragraph termed it.

Now, Mr. Editor, my wife has a high opinion of your *Monthly*, and if you knew her personally, I know you would value hers; and she says your magazine will be still further advanced in her estimation, if you will give a first-class recipe for cooking this squash? Will you oblige her?

Truly yours, ABNER PRIDEAUX."

[A bad recipe would be a poor return for so complimentary a note. Our friend, James H. Gregory, who was mainly instrumental in getting this variety so wide a popularity, we are quite sure can speak intelligently on this question.]

LET FRUIT RIPEN ON THE VINE.—Almost all fruit are gathered too early. With the Albany Seedling Strawberry, and the Lawton Blackberry, this is now well understood,—but it applies to all fruits. Mr. J. E. Mitchell has just placed on our table some Chasselas Grapes, that are quite equal to the best Frontignans in flavor, as we usually get them,—and some badly colored Hamburgs, that do no discredit to the well-earned reputation of that variety for good character. No doubt the good quality of many grapes when sent for Editorial opinions, beyond what one often afterwards finds from fruit fresh taken off, is caused by their ripening a little on the way.

Books, Catalogues, &c.

Our table is covered with pamphlets, catalogues, serials, and books for notice and review, but we have to pass them over for the present. As however this is the season for subscriptions, we cannot avoid saying, that amongst many very deserving periodicals that come regularly before us, the scientific portion of our readers should not forget

SILLIMAN'S AMERICAN JOURNAL OF SCIENCE.—All the different branches of science receive the attention, in turn, of the most distinguished men in their several branches of study. No one who wishes to keep up with the latest discoveries in any branch of science, can afford to do without it.

Those interested in the discoveries of art and mechanical invention, subscribe for

THE SCIENTIFIC AMERICAN, published by Munn & Co., New York, and the

ATLANTIC MONTHLY, published by Ticknor & Fields, of Boston, which stands at the head of monthly journals of polite literature, science and art,—and is the only one of its class that seems to take especial pains in the agricultural and rural departments.

New and Rare Fruits.

BOGUE'S EUREKA GRAPE.—The *Attica Atlas* calls attention to a grape with the above name, said to be a seedling of the Isabella, resembling it in size and shape of berry, with a darker color, of better flavor, a more rampant grower, and earlier—how much earlier is not stated.

NEW FOREIGN PEARS.—The following is a list of what is considered the best foreign Pears of the last two or three years:

Autumn Nellis (Standish).—Raised by F. Graham. Fruit small, skin covered with russet and blotched greenish-yellow; flesh melting, sweet and rich. Ripe in October.

Belle Julie.—A continental pear, described as of medium size, melting, and delicious. Ripe in Oct.

Bergamotte Hertrich.—This is a variety of the old Fortunée pear. The fruit is Bergamot-shaped, and of medium size, covered with a rich golden russet; flesh melting, very juicy, sprightly and refreshing. In use during April and May. Like all the very late pears, it requires a warm situation.

Beurre de Ghelin (Verschaffelt).—Raised by M. Fontaine, of Ghelin. Fruit large, irregular, pyriform, gibbous; skin pale yellow, blotched with pale brown; flesh yellowish-white, juicy, sweet, and fragrant. A first-rate dessert fruit.

British Queen.—Raised by Mr. Ingram at Frogmore. Fruit large, pyramidal; skin glossy, of a fine golden yellow, partly spread with cinnamon-russet, and sometimes crimson tinge on the sunny side; flesh yellowish-white, juicy, rich, aromatic. Ripe in October. One of the finest dessert pears known.

Doyenne d'Alencon.—Medium size, sometimes large; flesh melting, and deliciously flavored. Ripe from January to April. The tree forms a fine pyramid, and is also excellent for a wall.

De Maraise.—A beautiful melting pear, of delicious flavor. Ripe in November and December.

Madame Millett.—Very large, covered with a

golden russet; flesh melting and delicious, This is a valuable acquisition, the trees being of dwarf habit, and well adapted to grow as a bush or against a wall. Like Doyenne d'Alencon, it is admirably adapted for a warm garden, as, from its habit, it does not require much room, and it requires some shelter. No late pear is handsomer or of better flavor when fully ripe, and it keeps quite sound till May.

Morel.—Fruit medium size, covered with russet and blotched with yellow; flesh melting, vinous, brisk, inclined to an agreeable acidity. The tree forms a natural pyramid like a cypress, and is very ornamental, and well adapted for planting on a lawn. Though hardy it requires a sheltered place to ripen its fruit well. Season, April and May.

Louise Bonne de Printemps.—Fruit large, and in shape resembling that of the favorite autumn pear Louise Bonne de Jersey. Flesh not quite melting, but juicy and agreeable. In use March and April.

Marie Louise (D'Uccle).—Fruit medium size, melting, and rich flavor. Tree grows freely on the quince, and is most prolific. Season, October. One of the most useful of the new pears.

Passe Crassane.—Fruit of medium size, and much like the old favorite wall pear Crassane, but not quite so large. It is melting and rich in flavor, and keeps well till late in March.

Poire de Hert.—A medium size late melting pear, of great excellence. Season, April. The tree requires a warm situation to ripen its fruit properly, as is the case with all the late pears.

Nouvelle Fuloi.—Raised by M. Gregorie, of Joazeiro. A fine melting, perfumed, richly flavored pear. Ripe in January.

Huysh's Princess of Wales.—Fruit large, and superior in flavor to the Victoria and Bergamot pears of the same raiser, which is as high a character as any pear need have.

Vanderpool.—An American pear, raised by Mrs. Mary V. Gilbert, of Columbia. Medium size, tolerable regular in outline; skin of a uniform yellow color; the flesh melting, juicy, sweet, and without any grittiness at the core. It is said never to rot at the core, and when suffered to decay, it is often quite sound at the centre, when the outside has become rotten. The tree is of a vigorous habit, and a great bearer.

NEW BLACKBERRIES.—In an early volume of the *Monthly*, we referred to some varieties of which Mr. J. B. Orange, of Illinois, kindly sent us specimens. Two of these, since named "Dr. Warder," and "Col. Wilder," are highly spoken of.

New or Rare Plants.

CATTLEYA QUADRICOLOR.—Stems narrow, compressed, 6 or 8 inches high, often as long as the leaves, which are more erect than in other species of the genus. Peduncles usually bearing two flowers, which are not quite 4 inches across; these, with the exception of the lip, are of the purest white. The lip itself is rolled round the column, and trumpet-shaped (not spreading out in front, like many Cattleyas), and adorned with three colors: a rich purple transverse blotch forming its upper extremity, to which succeeds a band of yellow, which is itself succeeded by large patches of pale rosy lilac, fading away as they approach the base of the column.

This beautiful Cattleya is quite distinct from every previously known species of this genus. A single plant of it was introduced many years ago by Mr. Rucker, from New Grenada, and to his kindness I am indebted for the specimen that is now flowering at Knypersley, and from which the above description has been drawn up. It exactly accords with a sketch that I remember having seen in Dr. Lindley's herbarium, taken from a flower communicated by Mr. Rucker himself, and to which the name of *quadricolor* was assigned—no doubt because the pure white of the sepals and petals, with the purple, yellow, and lilac of the lip, made up the sum of four colors. I do not think the plant relishes as much heat even as other Cattleyas do, but as it is as yet exceedingly rare, it has not been possible to ascertain this or the contrary by experiment, and unfortunately we have no precise information as to the elevation or climate of the locality whence it was originally brought to Europe.

This is the only genuine white Cattleya with which I am acquainted, for the so-called *C. crispa* is a *Lælia*, and *C. Wageneri* and *C. candida* are mere varieties of *C. Mossii* and *C. Harrisonii*.—*I. Bateman*.

COCCOSYPHILON DISCOLOR.—Introduced as long since as 1793, but now re-introduced to notice as a very effective plant for hanging-baskets. It is so employed at Farnham Castle and Dangstein. It is a native of the temperate mountains of St. Domingo and Jamaica. Its blue, berry-like flowers are in clusters on its creeping stems. We recommend it as a basket plant, and quote the following from the *Floral Magazine*:—"We have been supplied, through the kindness of the Bishop of Winchester,

with the following directions as to its cultivation by Mr. Lawrence, his Lordship's intelligent gardener: 'It is,' writes Mr. Lawrence, 'as most of our most beautiful things are, very easily cultivated. I find from experience, that during the summer months it will do better in a close greenhouse, near the glass, and fully exposed to the light and sun's rays, than in a stove as might be supposed from its being a native of the West Indies; but on the approach of autumn it requires more heat, both to bring its flowers and its beautiful ultramarine berries to perfection,—the latter lasting in their brilliancy during the whole winter. It will thrive during the winter in any house where heat is used, such as a Cucumber or Pine-pit, or intermediate house. The propagation, also, is very easy, as it grows equally freely by seeds or cuttings. When planting it in the basket, I first line it with moss, then fill it up with an ordinary compost of loam, leaf mould, and sand; when the plant begins to grow freely, I peg the shoots over the surface until it is thoroughly covered, then it will throw enough shoots over the edges to make a fine mass, otherwise it will look straggling and poor.'—*Cot. Gard.*

THE *Botanical Magazine* figures the following:

QUAMOCLIT NATIONIS (Mr. Nation's Quamoclit).—A tuberous-rooted perennial. A native of the Peruvian Cordillera. Flowers scarlet, stems run the whole length of the rafters of a greenhouse. It may possibly bear our summers in the open air.

SACCOLABIUM HARRISONIANUM (Mr. Harrison's Saccolabium).—Native of Pulo Penang in the Chinese seas; imported by Messrs. Stuart & Low, of the Clapton Nursey. Flowers white.

MACLEANIA SPECIOSISSIMA (Splendid Macleania).—Native of Columbia. A lovely flowering shrub; flowers scarlet tipped with yellow. Requires to be placed on a bracket, in a warm greenhouse, that its branches may hang down.

DENDROBIUM MARGINATUM (White-edged Dendrobium).—Introduced from Moulmein by Messrs. Hugh Low & Co. Flowers white, lip spotted with orange; lower lobe orange, but white edged.

MICRANTHELLA CANDOLLEI (De Candolle's Micranthella).—Native of the Andes, at an elevation of from 9000 to 10,000 feet. Flowers purple, with very prominent yellow anthers. Well suited for greenhouse cultivation.

MECONOPSIS ACULEATA (Prickly Meconopsis).—Native of the Kumaon and other South Indian mountains, at elevations of from 10,000 to 14,000 feet. Flowers large, purplish blue.

CYMBIDIUM TRIGRINUM (Spotted-lipped Cymbi-

dium).—Native of Tennasserim mountains, at an elevation of 6000 feet. Introduced by Messrs. Low & Co., Clapton Nursery. Flowers cream colored; lip with short crimson stripes.

URCEOLINA PENDULA (Drooping Urceolina).—Imported by Messrs. Veitch of King's road, Chelsea, through their collector Mr. Pearce. Native of woods on the Andes, at Pozuzo. Flowers yellow, green-tipped, and white-edged, urn shaped, drooping, in an umbel; each on a green tube so narrow as to resemble a pedicel. Bloomed in June.

ERANTHEMUM COOPERI (Sir Daniel Cooper's Eranthemum).—Raised by Messrs. Veitch from seed received by Sir D. Cooper, from New Caledonia. Bloomed in a warm greenhouse during June. Flowers white, with middle one of the lower limbs dotted in purple lines.

ACHYRANTHES VERSCHAFFELTII. Versch.—A splendid introduction; it is the rival of the charming *Coleus Verschaffeltii*, with the advantage that the *Achyranthes* is less delicate, and may be kept easily in a good greenhouse. It will be one of the finest plants for planting out in summer.

ACACIA PETIOLARIS.—One of the most strikingly beautiful of this grand genus; its broad dark green foliage, and fine clusters of deep primrose flowers, combine to make it an extremely picturesque, and desirable plant for conservatory decoration. This is perhaps one of the finest *Acacias* in cultivation.

ACER PSEUDO-PLATANUS var. LEOPOLDII.—One of the best variegated *Acers* that we have. A correct drawing may be seen in the September number of the "*Illustration Horticole*."

PIRYNIIUM (MARANTA) VANDEN HECKEL. Versch.—This splendid *Maranta* was introduced by the botanic collector Baraquin, who discovered it in Para. It is one of the finest introductions.

THE *Floral Magazine* figures the following:

PELARGONIUM UNITED ITALY.—Exhibited by Messrs. Henderson & Son, Wellington Road Nursery. It is one of the tricolored-leaved varieties. Margin of the leaves creamy white; next a broad zone of crimson pink; next a bronzy dark shade; and centre green. Flower small scarlet. It is a good dwarf pot plant.

BARKERIA SKINNERI SUPERBA.—A cool-house Orchid.

DISK-SHAPED NEMOPHILA.—A variety of *Nemophila maculata*, obtained by Messrs. Carter &

Co., High Holborn. Corolla white, and base of the disk deep purple.

TREE-FLOWERING MONOCHÆTUM.—A variety of *Monochætum sericeum*; introduced by Messrs. Smith of Dulwich; flowers deep pink.

Domestic Intelligence.

THE PRIZE FRUITS.—The Judges on Fruit of the Horticultural branch of the American Institute having been requested to give further opportunity to fruit-growers to compete for the prizes of \$100 each, offered by Mr. Greeley for the best bushel of apples and pears, have resolved to hold a series of exhibitions at the rooms of the American Institute, in the Cooper Union Building, on the first Tuesdays of November, December, January, and February next, at 2 p. m., and invite all fruit-growers desirous of competing to exhibit their fruit at one of the above-named exhibitions.

The Committee, in conference with Mr. Greeley, announce that it is his desire that the variety of apple or pear that, in the judgment of the Committee, shall be entitled to said premium, shall be adapted to the soil and climate of the Northern and Middle States, be of as uniform good character as possible in all soils, and all seasons, and a regular bearer; of such flavor as to be generally acceptable, and its size, beauty, and excellence such as shall make it universally popular. This the Committee will therefore regard as the standard to which all varieties so competing must be referred.

If two varieties of equal excellence be presented, and in all those respects seem to be alike, preference must then be given to the one that will give a fair crop of good size and average fair character under ordinary cultivation, such as it will receive in the hands of a majority of cultivators.

Dr. Grant, to whom was awarded the premium for the best seedling grape, having very generously consented that the exhibition shall remain open for other grape-growers to exhibit specimens of other varieties of grapes, in competition with the Iona, grape-growers are invited to present their fruit for the inspection of the judges at one of these exhibitions.

In view of the responsibility imposed upon the judges, they request that Messrs. Charles Downing of Newburg, and William L. Ferris of Throgg's Neck, be added to their number.

ISAAC M. WARD. W. S. CARPENTER,
P. T. QUINN.

RESIDENCE OF S. B. WHIPPLE, ESQ., SAN MATEO.—In a recent visit of a day spent at San Mateo and vicinity, we enjoyed the hospitalities of Mr. Whipple and his pleasant and happy family.

The residence is a very pleasant one, embosomed in climbing roses and beautiful flowers, with grounds finely designed and laid out.

At the front, and surrounding the house, are stately native oaks, and our native *Ceanothus*, trained as trees and as a hedge; the residence being thus shielded, screens it from the summer sun, and makes it a very pleasant and healthful residence. A verandah surrounds the house and adds to its beauty.

The back ground of about 50 acres, enclosing the buildings and gardens, is laid off with three separate orchards of the choicest fruit trees and vines. The high fences which divide them break the wind, and serve also to train fruit upon, which we found in full bearing. The trees, however, need mulching, which would help the foliage. The leaves droop in the dry, hot atmosphere, and the trees are wanting in foliage.

Within the first inclosure is a fine double-span grape-house, about 60 feet long, with grapes in full bearing, many varieties ripe. About 100 vines were in fine condition. Among the varieties of grape we found Black Hamburg, Cannon Hall Muscat, Golden Chasselas, Chasselas of Frontignac, and Chasselas of Fontainebleau, Palestine, White Nice, and Black and White St. Peters; those we tasted were in luscious order.

Around the walls of the first orchard, trees were trained to the walls; and along the borders were currants, gooseberries, and strawberries.

We noticed perfect order everywhere; not a weed was to be seen in all the grounds; excellent taste and neatness were the prevailing features.

Two large 'water tanks' stood some 20 feet high upon a raised platform in the center of the garden—water raised to them by a windmill, from a deep well.

Two other orchards of apples and pears, had protecting fences to break off the bleak winds.

There is a finely hedged drive to the stable, which is a very fine building, with well arranged stalls, and every convenience for its purpose. The yards, and all the other buildings for stock are admirably arranged.—*California Farmer*.

FEEDING GOLD FISH.—We have been told by persons who keep Gold Fish, that they do not require to be fed; and we have seen it stated by others, that Gold Fish will soon starve to death unless

they are properly supplied with food. Perhaps some of our readers who have had experience will answer our correspondent's question. It is possible that he is not aware of the necessity of changing the water frequently. Though 8-9ths of all water is oxygen, the gills of fishes have not the power of decomposing water and appropriating the oxygen which is chemically combined in its constitution. Their life is sustained by free oxygen which the water absorbs from the atmosphere, and as soon as this is exhausted the fishes cease to breathe. Hence the necessity of either frequently changing the water, or forcing air into it by an air-pump.—*Scientific American*.

[We saw a Gold Fish kept in an aquarium with plenty of aquatic plants, three years without feeding. It did not perceptibly increase in size all that time, but seemed always 'gay and happy.'—ED. G. M.]

NURSERIES AT BLOOMINGTON, ILL.—F. K. PHOENIX, of the Bloomington Nurseries. His grounds are divided into 90 acres of apple trees, 26 acres of peach, 25 acres of pear, 15 of grapes, 22 of evergreens, 8 of cherry and plum, 6 of small fruits, 4 of roses, and the balance, 24 acres, in ornamental trees, shrubs, bulbs, &c. The grounds are somewhat scattered, but all within a mile and a half of the home grounds.

There are over 10,000 feet of glass used in propagating stock of various kinds and for plant-houses. The principal houses are a triple range—three houses—each 100x11 feet, heated with hot water. These were built the past spring. Mr. P. has also added other buildings, one a large two-story brick office conveniently arranged to accommodate his growing trade; also a large and commodious brick stable.

OVERMAN & MANN.—Captain Mann has recently resigned his position in the army on account of his health, where he has served nearly two years, and returned home to the peaceful pursuit of horticulture. The leading feature for some years with this firm was the supplying of the Osage Orange plants for hedges, at the same time keeping up a very general stock of fruit and ornamental trees, shrubs, &c.

From careful observation for years in the treatment of hedges, in trimming, etc., Mr. Overman seems inclined to discard the old method of cutting back the hedge yearly, in order to thicken it up at the bottom, and prefers to let it grow naturally for several years, say six to eight, without cutting back, then 'plash' it, that is cut it partly off near

the ground and lean it over in the direction of the row, to an angle of thirty degrees, thus forming a dense bottom, as the new shoots thrown out from the 'plashed' spot will be numerous and spread out both ways. In order to get at the hedge to do this work it will have to be trimmed up at the sides. Concerning a machine to trim with, Mr. O. did not know of a successful one; had seen one tried the past season that promised well, if it could be guided. It was composed of a large wheel, say six feet in diameter, with four knives or blades extending from its periphery. This was attached to a frame on wheels, so as to stand vertically by the side of the hedge, and revolved as the carriage advanced, cutting upwards. The trouble seemed to arise from the difficulty in governing it with the row; also from the irregularity of the surface of the ground, in keeping it up to its work; if the ground along the row were nicely graded and sodded, we think this might become practical. We can hardly expect, however, to ever have grounds kept even enough to regulate the cutting, and some contrivance must be resorted to by knuckle joint in the shaft, or otherwise, for the operator to keep the wheel to its work.

JESSE W. FELL has made a speciality of cultivating and setting out ornamental trees, and immediately about his home, at Normal, he has created almost a paradise by planting trees in very large variety, most artistically arranged from plans laid out by Mr. Wm. Saunders, now of the Department of Agriculture, at Washington; and for miles around can be seen the effects of his spirit in tree planting, in streets lined, lots laid out, and trees arranged, leaving building spots, many of which find ready sale at large prices. Mr. F. is an enthusiast in this respect, and at the same time turns his efforts to account pecuniarily.

W. P. WILLS & SON have also a small nursery. It is devoted largely to evergreens and apple trees. It has only been established a little more than three years.

BEAUMONT & LELAND have commenced an establishment for the propagation of grapes and plants, and have erected a good glass house, heated with flues, where they have turned out a splendid lot of grape vines, which they are now transferring to the open ground. We here saw the finest lot of Delawares from single eyes we have ever seen together.

DR. SHREEDER must not be forgotten. His vineyard is prospering, although the winter killed quite a large number of his vines back to the ground.

The Doctor has been very successful with strawberries. He has a new seedling of the Wilson.

which he calls *John Brown*. In appearance, foliage and apparent yield, it resembles the Wilson, but the Doctor assures us it is eleven days earlier than the Wilson in the same locations. He will test it further. The *Triomphe de Gaud*—"Humbug,"—the Dr. discards from his list as unworthy of cultivation, although he has it for comparison. There will be a large crop of small fruits, currants, etc., on his grounds.

The Dr. has made arrangements to erect at once a cold grapery, 150 by 30 feet; and if he hears of any one there making a larger one, he will still build larger. We were treated to samples of the Doctor's wine—sparkling Catawba and the sour wines—both of which are creditable specimens, and will secure him sale for all he can produce.—*P. Flor.*

THE CALIFORNIA TEA PLANTS.—In these parts there are two kinds of the evergreen bush, indigenous to the country, used as a substitute for tea. One produces no leaf, but a stem, the annual growth of which is from six to fourteen inches. The new growth is what is used for tea. The stem is of a very rich green color, and is somewhat of a gummy nature. Steeped in the usual method, it produces a beverage of very nice flavor, and is used, to a considerable extent, as a table drink, where the China teas cannot be had. It contains valuable medicinal qualities, acting moderately upon the kidneys. Large quantities are grown about here. We think if the Shakers would make an extract from this shrub, it would be invaluable as a medicine in certain cases.

The other bush bears a dark green leaf, about the size of a pear leaf, rather gummy on the under side. This is also used as a substitute for tea, and makes a pleasant drink.—*Rural New-Yorker.*

[These are evidently species of *Ceanothus*. By care in drying, probably a tea might be introduced from these and our Atlantic *Ceanothus*, that might really supersede Chinese tea. It would be a great national benefit; only our people must not imitate a recent ease, and pretend they have the real Chinese tea.—*Ed. G. M.*]

Foreign Intelligence.

ORIGIN OF THE CLOVE PINK.—If a florist feels a greater degree of pleasure at times more than others, it is when he beholds some new and first-rate flower, which naturally leads him to an inquiry as to its name, by whom it was raised, or its method

of culture. It rarely occurs but that there is a pleasure in tracing its origin, more particularly when it comes within that sphere of amusement cultivated by himself. There having been, in my humble opinion, no true account given, or statement made, by any person relative to the above-named flower, which within a few years has raised its head almost from insignificance to a place worthy the admiration of all florists, I flatter myself that no person is in possession of better information upon this subject than myself, having been particularly acquainted with the raiser of the first-named Pink which came under the notice of the public, as also having had access to his books, as well as personal information from him. The first Pink worthy of notice was raised in the year 1772, by Mr. James Major, who was then gardener to the Duchess of Lancaster; previous to which there was but four sorts, and those of very little note, being cultivated only for common border flowers. Mr. Major having saved some seed in 1771, he reared several plants, which, blooming the next season, one out of the number proved to be a double flower with laced petals, at which he was agreeably surprised, although he considered it as being only in embryo, and the prelude to some further advance, to be developed at some future period, which is now verified by the rapid strides this beautiful flower has made within a few years. Mr. Major also informed me that he made his discovery known to a professional gentleman, (a florist), who came to see it, and offered him the sum of ten guineas for the stock; but he declined the offer till he had consulted more of his floricultural friends, which having done, one gentleman told him he had done perfectly right in not accepting the offer, and advised him to increase the stock for the ensuing year, and then offer them for sale to the public. He took the hint, and accepted this advice of his friend, and sold it out to the public at 10s. 6d. a pair, under the name of Major's Duchess of Lancashire, the orders for which amounted to the sum of £80. One order to a single individual of forty pairs was delivered at the above price; and I think I may venture to say that no person has ever been able to make half that sum by any new Pink since.—*Gardener's Weekly.*

TOKAY WINE.—The village of Tokay, which gave its name to the Wine, is situated in Hungary, on the top of a hill near the meeting of the Rodrog with the Theiss. The vineyards are to the west of the Rodrog, and they occupy a space of 10 square miles. The earth is of yellow chalk, mixed with large pebbles. The wine is white, and the vintage

is commenced as late in the year as possible, but generally at the end of October. There are four different kinds of Tokay. The first is made by placing the Grapes when cleared of all rotten fruit, in a wooden vat, with a double bottom, of which the one on which the Grapes rest is pierced with small holes. The vat is filled with grapes, and covered with boards. After a few hours the grapes become heated to 80° Fahrenheit, and fermentation sets in. The fermentation destroys the tartaric acid, and the weight of the grapes forces the juice through the holes in the bottom. The grapes are then trodden under foot, and the wine is poured into small casks, where it remains exposed to the air for a month after having fermented for two days. This is the wine which is generally exported. When of good quality it has a silvery, oily color, the taste sweet and mellow, with a peculiar earthy flavor, slightly astringent and aromatic, with good body. This wine may be preserved for an almost indefinite period, but it is not drinkable until it is three years old. Some Vine-growers in the Arriège cultivate vineyards on the tops of the highest mountains in calcareous earth, covered with stones similar to those found in the vineyards near Tokay, but they have not as yet succeeded in producing any thing as good as the Hungarian wine.—*Monit. Vitecole.*

THE YEDDO GRAPE, by some English horticulturists, is characterized as a distinct species, under the name *Vitis glaucescens*.

NEW VEGETABLES IN ENGLAND.—Princess Royal Pea is prized here for its productiveness and dwarf habit, and Beck's Dwarf Green Gem Bean is a most productive and rich-flavored little sort exactly suited to a gentleman's table. The Chusan Marrow, a new kind introduced this year, is bearing here. It is much more shrubby in habit than any other, is of a striped green color, of the same shape as the old kinds, and bears freely, the plant not occupying so much ground; it is as delicious as the Custard Marrow. Melville's Variegated Kale is also grown here, and in large shrubberies is a highly ornamental plant. Tom Thumb Lettuce is a firm and very small Cabbage Lettuce, not at all coarse for salads; and Wilson's Prolific Cucumber is a most abundant bearer, and just the sort for amateurs. Mr. Ascoug speaks very highly of Dean's Early Prolific Potato, a small-haulmed kind, only five or six days later than the Ashton, of medium size, but a wonderful cropper, and of excellent flavor.—*Cor. of London Cottage Gardener.*

MR. JAMES VEITCH, of the Exotic Nursery, Chelsea, at the close of the great exhibition at Brussels, was, on the distribution of prizes by the King, created a Knight of the Order of Leopold, in consideration of his distinguished services to horticulture. "A prophet is not without honor save in his own country." (Matt. xiii. 57.)

RAISING FERNS FROM SPORES.—Provide a bell-glass—say one of 6 or 7 inches in diameter, and a pot large enough to allow the glass to go about half an inch into the inside of it. Put a large crock or piece of pot over the hole in the pot, and on this place smaller pieces, so as to fill the pot to one-half its depth. A layer of moss or the rougher parts of the compost, should then be placed over the drainage, after which fill the pot to the rim with a compost of turfy peat, with a little sand intermixed. Gently press it down, leaving the soil slightly elevated in the center of the pot. Water with a rose watering-pot, and place the pot in a saucer of water, which should never be allowed to become empty afterwards. Whilst the surface of the soil is wet with the watering, brush the spores of the frond on to the soil with the hand, and when this is done, put on the bell-glass. The pot should be kept in a moderately shaded and moist part of the greenhouse. The surface of the soil must be kept constantly moist, which it will be if the saucer be kept full of water, and the bell-glass constantly over the pot. If, however, it become dry, a gentle sprinkling of water should be given through a very fine rose. When the seedlings appear, the bell-glass may be tilted a little on one side by placing a small stone under the edge. After the seedlings gain strength they should be gradually exposed by removing the bell-glass by degrees, and potted singly when of sufficient strength. You will only succeed in raising the hardier greenhouse species in a greenhouse, for the hardy kinds, however, it will answer admirably.—*London Cottage Gardener.*

ON THE CRYPTOMERIA JAPONICA.—I believe in the Cryptomeria, but many people do not. I think that when it attains something like a fair size it will be a very distinct and striking tree—one which will make a feature in the landscape. I said that the main avenue is planted with Wellingtonias. I think the better plan would be to have Deodars and Wellingtonias in alternate pairs; but I should also have several secondary avenues, and one of these should be planted with Cryptomerias. In the account of the ascent of Fusi-jama (the sacred mountain of Japan), which appeared in the *Times*,

of November 29, 1860, there were one or two expressions which found a home in my note-book. Mr. Aleock, our envoy at Jeddo, and seven others (of whom the botanist was one) were the first Europeans to ascend that mountain, about which so much of mystery hangs. The mountain is an extinct volcano, about 14,000 feet in altitude, with a crater at the top some two or three miles in circumference. The base of it is about 100 miles from Jeddo. Throughout the journey the expedition found the vegetation most luxuriant. "From the deepest valley to the mountain tops you beheld one dense mass of flowering shrubs and trees, in the foliage of which there is as great a variety as in the scenery." The writer says also, "The road from Jeddo to Odawara—forty-five miles—is flanked on either side with gigantic cedars and vines. The effect of many miles of these avenues, formed of trees averaging from 150 to 180 feet in height, is very striking. No tree is finer than the Cedar of Japan (*Cryptomeria japonica*)." You see the writer, who had a great variety of plants under his eye as he wrote, says that no tree is finer than this. Well, I will not go that length with him, but I will say that I do not believe that the *Cryptomeria* is valued as highly as it deserves to be.—*G'd. Weekly*.

NATIONAL HONORS TO HORTICULTURISTS.—For their distinguished services to Horticulture, Napoleon has conferred the honor of Commander of the Order of the Legion of Honor on Mons. Brongniart; and "Chevaliers" of the same order on A. D'Onnet, President of a local Horticultural Society, and on Mons. R. R. Gauthier, the eminent Paris florist.

BEURRE STERKMAN'S PEAR.—M. Decaisne in *Revue Horticole* asserts this is the same as the *Belle Alliance*. Baltet replies, in another number, that Decaisne is mistaken. He says the Sterkmans is an extremely variable pear however.

PHACA AND ASTRAGALUS.—Dr. Asa Gray is satisfied that the two genera *Astragalus* and *Phaca* must be united, and that the genus *Phaca* must be merged in *Astragalus*. It is in the botany of America that the distinction between *Phaca* and *Astragalus* is most pressing, and where the data for the answer are most largely to be found. While extra tropical Asia is the focus of true *Astragalus*, that of *Phaca* is in America, mainly in North America, with an extension along the Andes into S. America, while the flora of the Russian empire enumerates 168 species of *Astragalus* of which more than

nine-tenths are bilocellate or nearly so, and only six species of *Phaca*. Dr. Gray recognizes, in a paper read to the American Academy of Arts and Sciences, 66 species of the *Phaca* series, and 52 of *Astragalus* proper. Moreover, rather less than half of the latter are bilocellate by a dorsal septum, and at least half a dozen of different groups have been or might be referred to *Phaca*. Dr. Asa Gray concludes that *Phaca* must be merged in *Astragalus*, and that, since in, perhaps, the majority of *Phaceæ*, there is no intrusion nor peculiar tumidity of the seminiferous suture, the subtribe *Astragaleæ* of DeCandolle has no valid foundation, so that *Astragalus* is merely a genus of the *Galegeæ*—*Chronicle*.

Horticultural Notices.

PENN'A. HORTICULTURAL SOCIETY.

MONTHLY DISPLAY, OCTOBER 11.

The best display of plants, basket of Cut flowers, and Hanging basket, were awarded to D. McQueen, gardener to J. Longstreth, Esq.

The second best display of plants, second best basket, and best pair of Hand-bouquets, to F. O'Keefe, gardener to Joseph Harrison, Esq.

Best Table design, to Thos. Meghran, gardener to Owen Jones, Esq.

The best 3 bunches Foreign grapes, to Robert Buist. They were Barbarossa, Palestine and Muscat Hamburg.

Best 12 bunches Native grapes (they were Catawba and Isabella), and the best 6 Pears, to P. S. Bunting.

Best 6 bunches of Grapes, and best collection of Pears, to J. McLaughlin, gardener to I. B. Baxter.

Best 12 varieties of Apples, to S. W. Noble:—Baldwin, Ridge Pippin, Fallowater, Pennock, Northern Spy, R. I. Greening, Newtown Spitzenburg, Dutch Mignonne, Roxbury Russet, Jonathan, White Doctor, and Smith's Cider.

The Committee recommended a special premium to G. N. Loomis, for "a cluster of bunches of a new Seedling grape, which, from the specimens, is a very promising grape."

S. W. Noble, F. O'Keefe, J. Eadie, *Committee*.

The Vegetable Committee "called the attention" of the society to some Seedling potatoes, from S. G. Sharpless, called 'Monitor.' Others, called 'Buckley's Seedlings,' from John R. Penrose, and awarded a premium to A. W. Harrison, for Cuzco, Garnet Chili, and Pinkeye Rusty Coats.

Thos. Evans and R. Kilvington, *Committee*.

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